

**Leisure Participation and Mental Health in Tasmania:
A Lifecycle Approach**

BEN ALLEN KELLY

B.A. (Hons)

A dissertation submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy

Faculty of Education

Centre for Human Movement

University of Tasmania

May 2011

STATEMENT OF ORIGINALITY

This thesis contains no material which has been accepted for a degree or diploma by the University or any other institution, except by way of background information and duly acknowledged in the thesis, and to the best of the my knowledge and belief no material previously published or written by another person except where due acknowledgement is made in the text of the thesis, nor does the thesis contain any material that infringes copyright.

Ben Allen Kelly

May 9, 2011

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STATEMENT OF ETHICAL CONDUCT

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ABSTRACT

This thesis reports on research that examined the effect of leisure participation on mental ill-health and wellbeing across four lifecycle cohorts in the Australian state of Tasmania. Commonly referred to as free time or time spent free of responsibility, leisure is particularly relevant to modern society, providing relief from daily pressures and increasing responsibilities. Leisure provides opportunities for personal growth and development across the lifespan. The majority of previous research has focused predominantly on the effects of leisure participation on university student samples. The aims of this research were to (a) describe any differences in leisure participation between four lifecycle groups; (b) determine the effects of leisure participation on mental ill-health; and (c) ascertain any differences in leisure coping techniques on the prevalence of mental ill-health for each lifecycle group. Three research questions were devised and separate data analyses undertaken to fulfil the aims of the study.

Thirty-eight organisations including schools, clubs, volunteer organisations, and government agencies participated in the study to represent the four lifecycle groups of adolescent ($n=72$), young adult ($n=166$), middle age ($n=109$), and older adult ($n=59$) participants. The types of leisure activities most frequently participated in for achievement, social, and time-out reasons were explored using the Leisure Questionnaire (Passmore & French, 2001), alongside measures of Leisure Coping Beliefs and Leisure Coping Strategies, as measured using the Hierarchical Dimensions of Leisure Stress Coping (Iwasaki & Mannell, 2000). A measure of mental ill-health was also taken using the 12-item General Health Questionnaire (GHQ-12) (Goldberg, 1972).

Results show a focus on physical leisure activities for achievement, social, and time-out leisure for each lifecycle group. Multiple regression analysis revealed that *perceived* participation in social and time-out leisure contributed significantly in lowering mental ill-health for the adolescent, young adult, and middle age lifecycle groups. Leisure coping strategies were also found to significantly contribute to an improvement in mental ill-health in the adolescent, young adult, and older adult lifecycle group, with leisure coping beliefs significantly contributing to lowering levels of mental ill-health in the middle age lifecycle group.

These outcomes provide a basis for a better understanding of how leisure participation differs between the lifecycle groups and how leisure participation contributes to mental ill-health for each lifecycle category. Implications of this research are discussed with recommendations for mental health professionals, in terms of the promotion of leisure participation to enhance positive mental health within the community.

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CHAPTER 1

Introduction

Leisure and stress are experiences common to all individuals. In most cultures, leisure is associated with “free-time,” as well as the notions of autonomy, freedom of choice, intrinsic motivation, and enjoyment (Cassidy, 1996).

Traditionally, leisure has been defined as:

... a block of unoccupied time, spare time, or free time when we are free to rest or do what we choose. Leisure is time beyond that which is required for existence, the things which we must do, biologically, to stay alive (that is, eat, sleep, eliminate, medicate, and so on) and subsistence, the things we must do to make a living as in work, or prepare to make a living as in school, or pay for what we want done if we do not do it ourselves. Leisure is time in which our feelings of compulsion should be minimal. It is discretionary time, the time to be used according to our own judgement or choice. (Brightbill, 1960, p. 4)

More recently, leisure has been described as a *life domain* with the ability to impact on health and illness, similar to experiences in other life domains such as work (Cassidy, 2005; Trenberth, Dewe, & Walkey, 1999). Furthermore, leisure has been identified as an important determinant of life satisfaction, being predominantly free from the constraints imposed by work (Kirkcaldy & Furnham, 1990).

Participation in leisure is also not exclusive to modern society. Although the choice of activities may have changed over time, leisure is an ancient concept

with similar reasons for participation as in the modern era. Caldwell (2005) described the reasons for participation in leisure by the ancient Greeks.

The ancient Greek scholars ... partook in leisure activities to achieve personal excellence in all aspects of life ... increasing physical performance, acquiring knowledge, philosophy, and participating in the humanities ... They used the word *scholē*, which means “employment of leisure time to study and learn”, to describe their endeavours. (p. 18)

Stebbins (1999) defined two types of leisure: casual and serious leisure, to better understand the way in which individuals spend their free time. Casual leisure refers to activities that are immediately and intrinsically rewarding, as well as short-lived and pleasurable. Casual leisure activities therefore require little or no special training to enjoy participation (Stebbins, 1997). Types of casual leisure include, relaxation (e.g., sitting, napping, strolling), passive entertainment (e.g., television, books), sociable conversation, and sensory stimulation (e.g., sex, eating, drinking). Serious leisure, on the other hand, has been defined as the systematic pursuit of an amateur, hobbyist, or volunteer activity that individuals find substantial and interesting. In most cases, participants of serious leisure launch themselves on a career based on acquiring and expressing special knowledge and experience stemming from participation (Stebbins, 1992). Types of serious leisure include non-professional sports, enthusiast activities (e.g., collecting, bird watching), and volunteering.

Activities undertaken during leisure time have often been referred to as recreational activities (Cushman & Laidler, 1990; Kraus, 1978; Yukic, 1970). Recreation has been defined as “activity voluntarily undertaken, primarily for pleasure and satisfaction, during leisure time” (Pigram, 1983, p.3). Given this

definition implies that recreation involves activities freely chosen for participation for leisure, the term recreational activities will infer leisure participation throughout this research.

Leisure and Recreation in Australia

In Australia, participation in recreational activities contributes up to 12.8% towards all household expenditure (Australian Bureau of Statistics, 2007). Participation in leisure is the fourth highest category of all household expenditure, preceded only by the purchase of food and non-alcoholic beverages (17.1%), housing costs (16.1%), and transportation costs (15.6%). Expenditure on *recreation* as defined by the Australian Bureau of Statistics (ABS) (2007) does not include the purchase of alcoholic beverages, tobacco products, personal care, and other miscellaneous goods and services, which account for 2.6%, 1.3%, 1.9%, and 8.9% respectively. Given these activities could all be included within Stebbins' (1999) definition of casual leisure, leisure participation is possibly the highest category of household expenditure in Australia at 27.5%, accounting for over a quarter of all household expenditure.

Given that leisure has been described as a life domain (Cassidy, 2005) and is one of the highest categories of expense for Australian citizens (ABS, 2007), participation in leisure activities has the potential to contribute to happiness, health, and wellbeing through participation in activities that promote physical and mental health through exercise, musical appreciation, and cultural activities. Conversely, leisure time can also create personal and interpersonal problems through activities including substance abuse (e.g., drinking and drug-taking), gambling, and other risk-taking behaviours. Participation in these types of

activities increases the likelihood of physical ill-health and has the potential to cause psychological maladaptations, impairing social and psychological functioning (Leitner & Leitner, 2005). Participation in leisure pursuits can therefore have the potential to increase health and wellbeing through positive leisure experiences, or, alternatively, create interpersonal difficulties through participation in negative and risky leisure behaviours, resulting in increased stress and mental ill-health.

Stress Research

Stress is described by Lazarus and Folkman (1984) as a state that is experienced by individuals when interacting with their environment, which is caused by a perceived discrepancy between situational demands and personal resources to meet these demands. This perceived discrepancy between situational demand and personal resources is believed to endanger personal wellbeing, creating psychological stress – the experience of negative feelings such as anxiety, depression, fear, and anger (Houston, 1987). Stimulus-based definitions of stress focus on the effects of specific stimuli or situations that may disturb or disrupt an individual's functioning, requiring adaptation or readjustment in response to the stressful event (Holmes & Rahe, 1967). A major criticism of a stimulus-based definition of stress is that each individual has the tendency to react differently to the same potentially stressful situation (Cox & Ferguson, 1991). Therefore, Lazarus and Folkman's definition is a more appropriate and applicable definition for this research.

The majority of stress research has focused predominantly on the effects of anxiety and depression on stress and coping, rather than on the presence of

pleasant experiences such as happiness and life satisfaction (Caldwell, 2005; Folkman & Moskowitz, 2000). More recently there has been a shift in focus from the impact of negative affect (e.g., negative feelings/emotions), to the impact of positive affect (e.g., positive feelings/emotions) on stress levels and effectiveness of coping. Positive affect developed through positive experiences and the development of good mood has been found to buffer against adverse physiological effects of stress (Frederickson & Levenson, 1998), as well as helping to prevent clinical depression in the context of chronic life stresses (Gross & Munoz, 1995). By definition, leisure involves participation in activities that are associated with life satisfaction, freedom of choice, intrinsic motivation, positive affect, and enjoyment (Cassidy, 1996; Kirkcaldy & Furnham, 1990). It is therefore likely that leisure has the potential to influence the level of positive affect experienced and thus help to shift the focus away from the negative emotions derived from stressful experiences, thereby helping to promote positive mental health and wellbeing.

Leisure and Coping with Stress

The majority of research on leisure, stress, and coping, can be organised into three general types of inquiry: (a) the prevention of stress; (b) coping with stress; and (c) transcending negative events (Caldwell, 2005). Furthermore, Patterson and Coleman (1996) suggest that the research supports two distinct premises: (a) that leisure provides a longer-term capacity to “inoculate” people against stress; and (b) that engagement in leisure is used to relieve stress after the stress has occurred. This idea reflects the three general inquiries mentioned by Caldwell (2005) and the analogy with biological immunisation presented by

Rutter (1987). In his analogy, Rutter refers to successful coping and the immunisation against stress through the successful engagement with small daily hassles or minor events. The following analogy is helpful in understanding his view:

... immunization does *not* lie in the direct promotion of positive physical health; to the contrary, it comprises exposure to, and successful coping with, a small (modified) dose of the noxious infectious agent. Protection in this case resides, not in the evasion of the risk, but in successful engagement with it. (p. 318)

Garnezy (1987), in his research involving children who were identified as stress-resistant, focused specifically on variables or protective factors that help individuals deal with stress. The three protective factors identified as influential in buffering life stress were personality dispositions, a supportive family environment, and external support systems. If the balance between these protective factors outweighs the frequency, intensity, and duration of the risk factors (i.e., adverse situations), which can cause stress and maladaptive behaviour, then a resilient behavioural outcome is thought likely to occur. The third protective factor relating to external support systems includes support from significant others outside of the family environment, quite often in the form of peers and older role models in the academic, sporting, and leisure domains. In support of this, Werner (1989) found that participation in extra-curricular activities played an important role in the lives of the children categorised as high-risk resilient. Werner found that participation helped to promote a sense of meaning and control over life for the high-risk resilient children, in turn, assisting the individual to enhance self-concept, as well as providing emotional support

through leaders or other significant role models involved in the activity. More recently, Caldwell's (2005) review of leisure coping research has echoed the importance of participation in extra-curricular activities, by suggesting that the opportunity to participate in meaningful activities, to develop healthy personal relationships, and to possess a safe living environment can all act as protective factors that buffer against stress in a person's life.

Even though leisure and stress are thought to be experiences common to all individuals, this research aims to show that an interaction between these life domains in response to stressful situations can help to promote wellbeing and positive mental health. Protective factors such as positive individual dispositions, a supportive family environment, and social support provided by others outside of the family unit have been suggested by Garmezy (1987) and Werner (1989) as variables that may help to buffer stress and promote stress-resistance in individuals. Traditionally, the effect of leisure participation per se on stress and coping has not received as much research attention as the protective factors described earlier (e.g., Garmezy, 1987) in influencing stress resistant responses. Even though participation in leisure activities has been identified as providing a unique set of protective factors to help individuals cope with stressful situations (e.g., Caldwell, 2005) more research across the lifecycle is required to better understand the influence of leisure participation in enhancing a resilient response and promoting stress resistance in the face of adversity.

Direction of Research

Early studies (e.g., Cassidy, 1996; Coleman, 1993; Coleman & Iso-Ahola, 1993; Iso-Ahola & Park, 1996) in the leisure coping field hypothesised that protective factors (e.g., individual dispositions and social support), when gained specifically through leisure participation (e.g., extra-curricular activities) (Mahoney, 2000), could have a unique and positive effect on individual wellbeing and help to buffer against the effects of stress. This original theoretical contribution to the literature paved the way for further studies investigating the effects of leisure participation on stress and coping, with the majority of research focusing on adult populations, predominantly university samples (Iwasaki, 2001; Iwasaki, 2003; Kimball & Freysinger, 2003), specific working groups such as police and emergency personnel (Iwasaki, Mannell, Smale, & Butcher, 2005; Trenberth & Dewe, 2005; Trenberth, et al., 1999), disadvantaged sections of the population (Iwasaki, MacTavish, & Mackay, 2005; Klitzing, 2003; Loy, Dattilo, & Kleiber, 2003), and culture and gender combinations (e.g., women in Brazil) (Ponde, 2000).

More recently Cassidy (2005) noted that a developmental lifespan perspective and its use as a mechanism for coping with stress is what is missing from the research on leisure. Caldwell (2005) also noted that the therapeutic aspects of leisure are potentially useful across the lifespan and that the therapeutic benefit of leisure participation may change as an individual passes through different developmental stages of life. The purpose of the research reported in this study was therefore to investigate the effect of leisure participation on mental ill-health within the lifecycle, including adolescent, young adult, middle age, and

older adult lifecycle groups. The research questions presented in chapter 2 focus on three specific areas of leisure coping research, namely

1. the differences in the frequency, enjoyment, and freedom to choose leisure participation between lifecycle groups;
2. the effects of leisure participation on mental ill-health for each lifecycle group;
3. the effects of leisure specific coping beliefs and strategies on mental ill-health for each lifecycle group.

Thesis Structure

This thesis comprises seven chapters. The chapter that follows presents a review of literature relevant to leisure coping research including theories relating to the classification of leisure activities and the methodological framework of the Hierarchical Dimensions of Leisure Stress Coping (Iwasaki & Mannell, 2000). Previous research relating to lifecycle, leisure, stress, and coping thought relevant to this research is also addressed. The review of the literature was instrumental in underpinning the development of the three research questions, which are detailed at the end of chapter 2 (p. 43). Chapter 3 details the methods used to collect and analyse the data, including a background on the inventories used to assess leisure participation, coping, and mental ill-health. Limitations for using a self-report inventory are also discussed.

The results and discussion are presented in four separate chapters. Chapters 4 to 6 provide results of each of the three research questions proposed in chapter 2. Chapter 4 specifically considers the differences in leisure participation, including types of leisure, frequency of participation, enjoyment of participation,

and freedom to choose participation between the lifecycle groups (Research Question 1). Chapter 5 focuses on data detailing the effects of the frequency of leisure participation on mental ill-health for each lifecycle group (Research Question 2). Chapter 6 reports data detailing the use of, and effects of leisure coping techniques (leisure coping beliefs and leisure coping strategies) on mental ill-health for each lifecycle group (Research Question 3). Chapter 7 is a discussion chapter, providing insight into the results of the previous three chapters, including implications for the Tasmanian community. In addition it will discuss limitations and strengths of the research which provide groundwork for further studies relating to leisure participation, coping, and mental health for other communities.

CHAPTER 2

Literature Review

Leisure and Lifecycle Research

Research on leisure participation and lifecycle has focused on individual lifestyle contexts (e.g., adolescence, older adulthood) rather than a broad cross-sectional approach to lifespan more generally (Agahi & Parker, 2005; Lennartsson & Silverstein, 2001; Menec, 2003; Passmore & French, 2000). This research has led to theoretical foundations and speculation on the effect of the use of leisure participation on stress and wellbeing, predominantly in adolescent and young adult populations (Caltabiano, 1995; Iwasaki, 2001; Iwasaki, 2003; Passmore & French, 2000). Leisure has been identified as a fourth developmental context for adolescence (Silbereisen & Todt, 1994) and participation quite often centres on the notions of risk and opportunity. This implies the possibility of both positive and negative use of leisure time in adolescence (Caldwell, 2005; Kleiber, 1999). The interplay of participation in risk activities (e.g., risky sexual behaviour or substance use) contrasted with opportunistic leisure activities (e.g., participation in organised sports and societies), can either promote stress resistance or augment maladaptive behaviour. In particular, the use of opportunistic leisure activities during adolescence can promote the development of positive individual dispositions such as competency and self-efficacy (Passmore & French, 2000). Furthermore, research has shown that friendships derived through these opportunistic and positive leisure experiences can also provide strategies for individuals to cope effectively with stressful events during

this period of life (Garmezy, 1987; Iso-Ahola & Park, 1996; Iwasaki & Mannell, 2000; Rook, 1987; Werner, 1989).

Pioneering work by Erikson (1959) is influential in describing and understanding the concept of lifecycle and the effects of stress, resistance, and successful adaptation. Erikson's theory identifies eight stages of the lifecycle, beginning with infancy moving through to older age. There is an identification of different needs, dispositional developments, significant relationships, maladaptations, and malignancies that have the potential to occur at each stage of life (see Table 1).

These dispositions, relationships, maladaptations, and malignancies can help to further understand the interplay of risk and opportunistic leisure activities for health and wellbeing influencing successful adaptation for each lifecycle group. For instance, the interplay of both risk and opportunistic leisure activities for young adults may involve such activities as risky sexual behaviour, social sporting commitments, or membership to exclusive societies and clubs. These activities involve significant relationships with partners and/or friends. Furthermore, for middle age adults, concepts like *time-famine* or *time crunch* (Caldwell, 2005), brought about through work commitments or familial obligations, and are more central to the development of maladaptive behaviour during this stage of life with significant relationships being centred around the work and home environment.

Table 1

Erikson's Eight Stages of Lifecycle

Stage/Age	Psychosocial Crisis	Significant Relationships	Maladaptations and Malignancies
Stage 1: 0-1 years, Infant	Trust versus Mistrust	Mother	Sensory Distortion, Withdrawal
Stage 2: 2-3 years, Toddler	Autonomy versus Shame and Doubt	Parents	Impulsivity, Compulsion
Stage 3: 3-6 years, Preschooler	Initiative versus Guilt	Family	Ruthlessness, Inhibition
Stage 4: 7-12 years, School-Age Child	Industry versus Inferiority	Neighbourhood and School	Narrow Virtuosity, Inertia
Stage 5: 12-18 years, Adolescence	Ego-Identity versus Role Confusion	Peer groups and Role Models	Fanaticism, Repudiation
Stage 6: 19-30 years, Young Adult	Intimacy versus Isolation	Partner and Friends	Promiscuity, Exclusivity
Stage 7: 30-50 years, Middle Adult	Generativity versus Self- Absorption	Household and Workmates	Overextension, Rejectivity
Stage 8: 50+ years, Older Adult	Integrity versus Despair	Mankind or "My Kind"	Presumption, Despair

Note: Chart adapted from Erikson (1959).

Previous research has shown that those most constrained in time are typically married, parents, employed, middle aged adults (Zuzanek & Smale, 1997), further supporting Erikson's (1959) theory. For older aged adults, being "overscheduled" in leisure time may be a particularly important issue, particularly when the

significant relationships indicated by Erikson have internal implications referring to self or limited sociability (see Table 1). Caldwell (2005) pointed to the need to have a variety of interests (in effect, a large leisure repertoire) due to an abundance of free time caused by retirement and/or physical impairment. Other studies have supported this proposition and in particular, have highlighted the effect of living arrangements on the rate of participation in leisure activity during middle-and-older age (Agahi & Parker, 2005; Perren, Arber, & Davidson, 2003; Satariano, Haight, & Tager, 2002).

Satariano et al. (2002) interviewed 2,073 men and women regarding participation in 22 different leisure-time physical activities including walking, gardening, swimming, and jogging, to determine the rate of physical activity in the elderly. The categorisations of living arrangements were determined based on the number of other people the participant lived with, and the relationship of each household member to the participant. For example, the categories constitute (a) lives alone; (b) lives with a spouse with or without others; and (c) lives with one or more persons other than a spouse. The results revealed that those cohabiting with a spouse or partner had a greater tendency to engage in more physical activity, than those who live alone or with non-related others. Among married couples ($n=511$), participation in physical leisure activities of the partner was the greatest predictor of participation, with a significant association between the partner's leisure time physical activity when accounting for age, education, health, and depression ($\chi^2=48.9, p<0.001$). A gender difference in the effect of living arrangements on the rate of physical activity was also reported, with approximately half of the women either living alone or cohabitating with a spouse or partner reporting that they participated in either moderate or vigorous activity,

whereas only 39.8% of women living with others (non-relatives) participated in this type of activity. In comparison, there was no significant difference in participation in leisure time physical activity for men regardless of living status. Approximately 50% of men in each of the living arrangement categories participated in moderate or vigorous activity.

Similar trends are reported by Agahi and Parker (2005) in their study of the elderly over a 10-year period. The categorisation of leisure activity was not exclusively focused on physical activity with participants being asked to indicate whether or not they participated in a list of 14 different activities. Living arrangements in this study were defined as either living alone or living with others. Agahi and Parker found that women who live alone had a 50% lower chance of engaging in physical leisure activities than women who lived with another person. This lower chance of engaging in physical activity was not evident in males, nor was it evident for any of the other leisure types. This result indicates that the motivation to perform physical leisure may be influenced by living arrangements in older adults. Social support networks developed through participation in leisure have long been linked to health related behaviour, such as physical health and wellbeing (Coleman, 1993; Coleman & Iso-Ahola, 1993; Iso-Ahola & Park, 1996; Lennartsson & Silverstein, 2001). The influence of living arrangements, particularly marital status, seems especially relevant in older adult populations (Agahi & Parker, 2005; Perren, Arber, & Davidson, 2003; Satariano, Haight, & Tager, 2002; Strain, Grabusic, Searle, & Dunn, 2002).

Although these studies (e.g., Agahi & Parker, 2005; Satariano, Haight, & Tager, 2002) have focused on living arrangements as an extrinsic motivator for participating in leisure activities, they have not provided information relating to

intrinsic motivators for older adult populations which may have the potential to influence the level of participation. Internalised reasons for participation, such as individual dispositions (e.g., self-esteem), and social opportunities, have potential in predicting the frequency of participation in leisure for adolescent and young adult lifecycle groups (Passmore & French, 2001), with further implications for mental health and wellbeing (Passmore & French, 2000). Although, the effect of living arrangements on leisure participation is an important factor, this research will focus on internal reasons for participation, rather than external factors and circumstances.

Perceived Participation in Leisure

Zuzanek, Robinson, and Iwasaki (1998) employed a lifecycle perspective to determine the relationship between stress, health, and physically active leisure. The researcher used the U.S. Bureau of the Census data (1985, 1990), which collects data on over 30,000 participants in each year of collection. The information was generated using a nationwide survey of all household members over the age of 19 years in both 1985 and 1990. A multi-staged probability procedure and a ratio-adjustment procedure were used to ensure the sample used in the study was representative across the lifecycle by age, gender, race, and residence. In both years of administration, the surveys contained a number of identical questions, in particular, relating to stress and health. This large sample size allowed Zuzanek et al. to identify 10 potential lifecycles based on four distinct variables that indicate major components of human life. These were age, marital status, employment status, and the presence of children in the household. These demographic variables have been found to represent dispositions and

constraints that limit or enhance personal time resources across the lifespan, and have the potential to distinguish between individuals in relation to leisure activity participation rates (Zuzanek et al., 1998).

Zuzanek et al. (1998) measured perceived stress, perceived health, and perceived physical activity, over a 2-week period using a self-assessment rating scale for each variable. A rate of actual physical activity was also measured using the composite Index of Participation in Physically Active Leisure (Zuzanek et al., 1998) to give an objective summary of participants' participation in physical leisure activities over a 2-week period. Analysis including cross-tabulation, bivariate correlation analysis, and hierarchical multiple regressions were used to draw conclusions from the data. The three main findings from the study were that stress is unevenly distributed over the lifespan, that stress-reducing effects of physically active leisure are more prominent among retired older people, and that the direct physical health-enhancing effect of participation in physically active leisure was more evident than the buffering effects of physically active leisure on the stress levels.

According to results (Zuzanek et al., 1998), stress levels tended to increase with increasing age for the first three age categories identified (18-24 years; 25-34 years; 35-44 years), only to decrease with increasing age for the last three age categories (45-54 years; 55-64 years; 65+ years). In addition, women tended to report a higher rate of stress in each age category than men, with the highest percent of stress being reported by women in the 35-44 year old age category (70%). The most interesting finding in the Zuzanek et al. study was the moderating effect of perceived participation in physically active leisure seemed to be confined to the older life cycle cohort. This moderating effect was present for

participants who were retired and therefore, potentially the least strained by the psychological pressures of everyday life (Zuzanek et al., 1998; Zuzanek & Smale, 1997). This moderating effect was in turn absent in the middle age lifecycle cohort, who were most likely to be experiencing the greatest amount of stress due to work pressures and familial responsibility (Zuzanek et al., 1998). Although older adults were less likely to experience pressures of work commitments and familial obligations, it was thought that this moderating effect may assist older adults to cope with stressors relating to issues of retirement, abandonment, and despair (Caldwell, 2005; Erikson, 1959). Another possible reason for this finding could be that older adults may perceive a greater value in the belief that their level of participation (i.e., perceived physical activity), is on par with or greater than others of a similar age, especially due to a greater amount of free time which has been associated with retirement and physical impairment. Comparatively, younger cohorts gained more benefit from a higher level of actual participation in leisure activities, in particular, physical leisure activity. The bivariate correlation analysis supported this conclusion, revealing a significant and positive relationship between age and perceived participation in physically active leisure. In comparison, there was a significant and negative relationship between actual participation in physically active leisure and age.

In addition, Zuzanek et al. (1998) reported a difference between the perceived level and actual level of participation in leisure on stress and coping. Bivariate correlation analysis revealed that perceived participation in physically active leisure was negatively correlated with stress levels. Therefore, the more physical leisure an individual believed they were participating in, the lower the rate of stress reported. When physically active leisure was measured objectively,

as an indication of actual frequency of participation, stress was positively correlated to participation meaning that it was related to increased levels of stress. Although correlations were relatively weak for both measures of participation (-0.08 for men/-0.07 for women in perceived participation, and 0.10 for men/0.09 for women in actual participation) all correlations between physically active leisure and stress were significant at the 0.05 level. This finding has significant implications for promoting a physically active lifestyle for health and wellbeing. The effects of perceived participation and actual participation on mental ill-health will be further explored in the current research.

Interestingly, Zuzanek et al. (1998) reported that there was little support for the direct buffering effect of leisure activities (in this case physical leisure activities) on stress. The correlations between physical leisure and stress were relatively weak, yet significant for both men and women (-0.08 and -0.07, $p < 0.05$, respectively) due to the large sample size, and should be interpreted with caution. This relationship is not surprising given that previous research has found that leisure activities have a buffering effect on stress only when individuals are experiencing high levels of stress (Reich & Zautra, 1981). Given that the percentage of individuals reporting “relatively little stress” or “or no stress at all” was just under a half in each year of survey (49% and 42% respectively), perhaps the sample used by Zuzanek et al. did not report stress levels high enough to warrant a direct buffering effect of leisure activity on stress. Furthermore, Zuzanek et al. did not measure participation in other types of leisure activities (e.g., social leisure, solitary leisure) which may influence outcomes related to stress and coping in general. Since perceived participation in physically active leisure is an individual belief based on a comparison with others (Zuzanek et al.,

1998), this belief has the potential to transcend physical limitations and promote a moderating effect on stress and wellbeing through a sense of achievement and the generation of positive individual dispositions such as competence and self-esteem (Passmore & French, 2000).

From a lifecycle perspective, the aforementioned issues regarding the effects of leisure participation on health and wellbeing are of particular interest and deserve further exploration. Firstly, varying rates of leisure participation may be required at different stages in the lifecycle to help buffer stress and/or promote psychological wellbeing. The level of stress alleviation produced by participation in leisure activities may also depend on the level of stress usually felt by individuals within a certain stage of life and be influenced by lifestyle characteristics like marital status, living arrangements and socio-economic status, as mentioned earlier. Secondly, the effects of different types of leisure (e.g., physical, intellectual, and solitary) may also be more or less useful in coping with stress at different stages of life. Individuals may benefit from one type of leisure activity more than another type of activity depending on their age and other associated demographic variables. Even though physical leisure was found by Zuzanek et al. (1998) to reduce the effects of stress in older retired people, other forms of leisure activities may have a different and possibly more desirable effect on stress in other age groups. These potential effects of different types of leisure activities on stress and coping at different stages of the lifecycle are important to better understanding the context of health and wellbeing. The following sections will explore the classification of leisure and the effects different types of leisure have on mental health and wellbeing.

Leisure Typology

Participation in leisure activities and the types of leisure activities commonly enjoyed may change across the lifespan (Iso-Ahola, Jackson, & Dunn, 1994). It has been suggested that participation in leisure is a dialectical process in which an individual seeks out stability and change, structure and variety, and familiarity and novelty throughout the lifecycle (Iso-Ahola, 1980). Different leisure needs therefore may be required, and these needs may affect the potential benefits that participation may have on health and psychological wellbeing in the community.

The classification of leisure has had a long history, with activities being classified based on various criteria, including participation rates (Garton & Pratt, 1991; Gudykunst, Morra, Kantor, & Parker, 1981), preferences and interests (Garton & Pratt, 1991; Mills & Bledsoe, 1981), leisure needs (London, Crandall, & Fitzgibbons, 1977), and satisfaction derived from leisure (Beard & Ragheb, 1980). Most of the research to date has relied on the presentation of a list of specific leisure activities which are typically grouped together in a conceptual manner or through quantitative methods (e.g., principal component analysis) to devise groups representing “types of leisure” (e.g., Agahi & Parker, 2005; Iso-Ahola et al., 1994; Lennartsson & Silverstein, 2001; Menec, 2003). These groups essentially define the type of leisure activity based on the nature of the activity. For example, Iso-Ahola et al. (1994) grouped activities into the following classification: (a) exercise oriented activities; (b) outdoor recreational activities; (c) team sports; (d) hobbies; (e) home-based recreation; (f) mechanised outdoor recreation; and (g) other activities.

Other typologies have been more global in classification, grouping activities into themed areas such physical, social, cultural, and solitary leisure pursuits. Agahi and Parker (2005), for example, identified four types of leisure activities, including social-cultural activities (e.g., going to a play or restaurant), physical leisure activities (e.g., going for a walk, dancing), intellectual activities (e.g., reading a newspaper/book, crossword puzzles), and expressive and religious leisure activities (e.g., hobbies, attending religious services) to help categorise the types of activities the elderly participated in during leisure time. Lennartson and Silverstein (2001) further broke up this categorisation to reflect social aspects and solitary aspects of leisure participation in the elderly to include social-friendship (e.g., visiting friends), social-cultural (e.g., going to a restaurant), solitary-sedentary (e.g., reading books), and solitary-active (e.g., gardening) activities. More recently there has been a shift in focus from not just describing leisure or rates of participation, but to a focus on the health-related benefits, both physical and psychological, of leisure participation, with research on classifying leisure activities based on stress-reduction benefits or possible influence on health and wellbeing (e.g., Agahi & Parker, 2005; Caltabiano, 1995; Menec, 2003; Passmore, 2003; Passmore & French, 2000).

Garton and Pratt (1991) measured the frequency of participation in a wide range of leisure pursuits to help better understand the psychological development of adolescence. Through a better understanding of how participation in leisure meets the social and personal needs of individuals, Garton and Pratt argue that a clearer understanding of the health-related benefits of leisure participation will evolve. From this research, Passmore and French (2001) used a focus group of adolescents to determine a three-factor typology of leisure. This typology

classifies leisure activities based on reason for participation rather than the type of activity per se. The classification of leisure activities into reasons for participation is also highlighted in the work of Trenberth et al. (1999) and further elaborated in terms of choice of activities for adolescents more recently in Hutchinson , Baldwin, and Oh (2006). The three types of activities proposed by Passmore and French (2001) were classified as achievement leisure, social leisure, and time-out leisure. Passmore and French (2001) defined achievement leisure as activities considered to be demanding and often competitive in nature. This includes activities that provide a sense of personal challenge. Participating in sports, playing a musical instrument, hobbies, and creative art pursuits are all examples of achievement leisure. Social leisure was defined as activities undertaken for the purpose of being in the company of others. Examples of social leisure include visiting family and friends, going to a bar or restaurant, and participating in sports or other types of physical activity for the purpose of being in the company of others. Time-out leisure refers to activities that are undemanding, relaxing, and frequently undertaken alone. Examples of time-out leisure include listening to music, watching television, lying in bed, or reading as a way to pass the time.

The three-factor typology of Passmore and French (2001) lends support for the shift away from what an individual *does* in leisure time, to what the activities actually *mean* psychologically for an individual (Cox & Ferguson, 1991), as an important aspect in the understanding of stress reduction through leisure participation. Classifying leisure behaviour based on reasons for participation, rather than types of activities, provides researchers with opportunity to investigate the effect leisure participation has on mental health and wellbeing. Participation in achievement and social leisure has been found to enhance

individual dispositions such as competency and self-efficacy, which in turn promote positive mental health (Passmore, 2003; Passmore & French, 2000). Classifying leisure activities based on the reason for participation allows for individual difference, within certain types of activities (e.g., playing sport), particularly between lifecycle groups. For example, when using this three-factor typology, adolescent participants may engage in sporting activities for achievement purposes, whereas middle age participants may participate for social reasons. Classifying leisure activities based on reasons for participation, therefore, accounts for these individual differences. Given this research is concerned with the effect of leisure participation on mental health at different stages of the lifecycle, the reasons for participation in leisure activities is fundamentally more important than the actual activity per se when determining these differences in outcomes.

Passmore and French (2001) used their three-factor taxonomy of leisure activities to explore the difference in frequency, enjoyment, and freedom to choose leisure activities in a sample of 850 Australian participants aged between 12 and 18 years studying at school, technical college (e.g., TAFE), or university. Participants were required to identify their three most frequent activities for each type of leisure (e.g., achievement, social, and time-out) and rate the frequency of participation, enjoyment of participation, and freedom to choose participation in each of their three selected activities. Frequency of participation in each leisure activity was rated on a five-point continuous scale ranging from 1 (once every few months) to 5 (daily). Enjoyment of participation in each leisure activity was rated on a four-point continuous scale ranging from 1 (not enjoyable) to 4 (very

enjoyable). Freedom to choose leisure was rated on a dichotomous scale, indicating yes (coded 1) and no (coded 0) for each leisure activity.

The total score for frequency of participation, enjoyment of participation, and freedom to choose participation for each of the three selected activities were combined for an overall score in each of the three types of leisure activities. Therefore, nine variables were produced; (a) frequency of achievement leisure; (b) frequency of social leisure; (c) frequency of time-out leisure; (d) enjoyment of achievement leisure; (e) enjoyment of social leisure; (f) enjoyment of time-out leisure; (g) freedom to choose achievement leisure; (h) freedom to choose social leisure; and (i) freedom to choose time-out leisure. A higher score for each variable was indicative of a greater level of frequency of participation, level of enjoyment, or freedom to choose the specific type of leisure activity.

Passmore and French (2001) reported differences between younger and older adolescents. A steady decrease in the frequency of participation in achievement leisure activities was found with age, with older adolescents participating less frequently in achievement leisure activities. In addition, a difference in the freedom to choose social leisure and time-out leisure was also found, with older adolescents reporting more freedom to choose in both social leisure and time-out leisure pursuits. There were no reported age-related differences in the enjoyment of achievement, social, or time-out leisure. Passmore and French also reported statistically significant gender differences, with male adolescents reporting significantly more frequent participation in achievement and social activities than female adolescents. Female adolescents reported significantly greater levels of enjoyment in time-out activities and greater freedom to choose time-out activities than their male counterparts. These results

provide a basis for further research across the lifecycle to better understand and determine the frequency of participation in different leisure pursuits at different stages of the lifecycle. The differences between younger and older participants within a lifecycle group, suggests potential differences between lifecycle groups. This reported difference in leisure participation within a lifecycle group reinforces the results of other research within lifecycle samples (e.g., Agahi & Parker, 2005; Konlaan, Bygren, & Johansson, 2000; Lennartsson & Silverstein, 2001; Menec, 2003). The majority of research, however, has classified leisure participation based on the type of leisure activity, rather than on the reason for participation in leisure as indicated by Passmore and French (2001). As discussed earlier, understanding leisure participation based on the reasons for participation has potential for better understanding how leisure can promote positive wellbeing, both physical and emotional, at different stage of the lifecycle.

This current study will build upon the research of Passmore and French (2001) and the three-factor typology of achievement, social, and time-out leisure to better understand the differences between the lifecycle groups as indicated by the research within the adolescent lifecycle group. The difference in the frequency of participation of leisure activities and the freedom to choose specific leisure activities within a life cycle (i.e., adolescence) suggests further possible changes in leisure behaviour beyond the period of adolescence. Similar changes may occur between other life cycle groups, for instance between adolescence and young adult or between young adult and middle age adults. Research employing a lifecycle perspective to effectively link four adult cohorts across the taxonomy of leisure participation developed by Passmore and French (2001) would seem to offer important information to extend current understandings. The case for such

research is further strengthened when literature addressing the significance of leisure for mental ill-health and wellbeing is considered.

Leisure Typology and Mental Health

As mentioned in chapter 1, preliminary studies in the leisure coping field hypothesised that protective factors gained specifically through leisure participation could have a unique and positive effect on individual wellbeing and help to buffer against the effects of stress (Caltabiano, 1995; Cassidy, 1996, 2000; Coleman & Iso-Ahola, 1993; Iso-Ahola & Park, 1996). As discussed previously, the reason for participation in certain leisure activities may differ between individuals for the same activity (e.g., achievement, social, or time-out reasons), with the reason for participation having a stress buffering effect rather than the type of activity per se (Passmore & French, 2000, 2001). Passmore and French (2000) revealed that participation in achievement and social leisure indirectly effected adolescent mental ill-health through the development of self-efficacy, competence, and self-worth. Using Structural Equation Modelling (SEM), Passmore and French found that participation in achievement leisure significantly enhanced self-efficacy, competence, and self-worth ($p < 0.05$), while social leisure enhanced feelings of competency ($p < 0.01$). These three individual dispositions were also found to have a direct, significant, and negative effect on mental ill-health, meaning that participation in achievement and social leisure significantly increased the prevalence of these individual dispositions, which in turn directly decreased the frequency of mental ill-health in this sample of adolescents. Even though Passmore and French reported participation in achievement and social leisure to have an indirect and negative effect on mental ill-health, participation in

time-out leisure had a significant and direct positive effect on mental ill-health ($R^2=0.13$, $p<0.01$). Therefore, higher levels of participation in time-out leisure were linked to higher levels of mental ill-health in this sample of adolescents.

Similarly, research with older adults has found that participation in social and productive activities has beneficial effects on wellbeing, functioning and survival (Menec, 2003). In a 6-year longitudinal investigation of leisure and wellbeing, Menec interviewed older aged adults ($N=1,868$), measuring predictor variables at the beginning of the study, including demographic variables, social support, functionality, cognition, physical difficulties, self-rated health, morbidity, life satisfaction, and leisure activities. Given the purpose of Menec's study was to examine the relationship between leisure participation and successful ageing, in the 6-year follow-up, the outcome measures included life satisfaction, happiness, functionality, and mortality. Participation in leisure activities were assessed using a 21-item checklist, with participants indicating if they had participated in the activities in the past week. The activities were then classified into three categories based on their likely social component, these were social activities (e.g., church-related, bingo, social groups, sports), solitary activities (e.g., hobbies, music, art, theatre, reading/writing), and productive activities (e.g., volunteer work, gardening, heavier housework) (Menec, 2003).

A series of hierarchical regressions revealed that social activities including attendance in social groups ($\beta=0.06$, $p<0.05$), participation in sports and games ($\beta=0.05$, $p<0.05$), participation in solitary activities such as hobbies ($\beta=0.05$, $p<0.05$), music and art ($\beta=0.06$, $p<0.05$), and reading and writing ($\beta=0.06$, $p<0.05$), were significant predictors of happiness in the 6-year follow-up. Furthermore, Menec (2003) reported that participation in social activities (e.g.,

church-related and group activities, such as bingo) and productive activities (e.g., volunteer work and yard work), to be significant predictors of better functionality and mortality (e.g., life), more so than participation in solitary activities. Only participation in solitary activities involving music, art, and theatre, predicted better functionality ($\beta=1.33$, $p<0.05$) in the 6-year follow-up.

These findings are contrary to the findings reported by Passmore and French (2000) who reported that participation in time-out leisure or more “solitary activities” had a direct and positive relationship with the rate of mental ill-health in adolescence. As indicated, Menec (2003) provided evidence to suggest that certain types of time-out leisure activities are a significant and positive predictor of increased happiness and better functionality for older adults. Although Passmore and French (2000) used an adolescent sample and Menec (2003) an older age sample, the need for further research on leisure participation across the lifespan is warranted to help better understand the discrepancy in findings regarding participation in time-out or solitary leisure. Research using the same measure of leisure participation and wellbeing (or mental ill-health) will help to determine whether participation in achievement leisure, social leisure, and/or time-out leisure activities have a different effect on mental ill-health for individuals across the lifespan. Much of the literature relating to participation in leisure in order to cope with stress has identified the development of individual dispositions and social support networks as the main factors that contribute to successful leisure coping (e.g., Caltabiano, 1995; Cassidy, 2005; Coleman, 1993; Coleman & Iso-Ahola, 1993; Iso-Ahola & Park, 1996; Passmore, 2003; Passmore & French, 2000). Further research should aim to better determine the effects of leisure typology on leisure coping techniques across the lifespan.

Hierarchical Dimensions of Leisure Stress Coping

Iwasaki and Mannell (2000) developed a hierarchical, three-tier model of leisure coping with dimensions at each level to explain how participation in leisure activities can contribute to an individual's ability to cope with daily stress. The Hierarchical Dimensions of Leisure Stress Coping (HDLSC) (Iwasaki & Mannell, 2000) is based on an extensive review of the social psychological and leisure research literature. This hierarchical model attempts to amalgamate much of the research on leisure participation as a means to coping with stress and has thus become a major influence in current leisure stress research. Several dimensions of the model have been theorised to be influential in coping with stress through leisure participation. These involve positive individual dispositions developed through participation in leisure activities, as well as social support elicited through participation (e.g., Caldwell & Smith, 1995; Endler, Parker, & Summerfeldt, 1993; Freysinger & Flannery, 1992; Hull & Michael, 1995; Iso-Ahola & Park, 1996; Lazarus, 1991, 1993; Pierce, Sarason, & Sarason, 1996; Rook, 1987; Vaux, 1992).

The HDLSC model contains three distinct levels relating to two primary leisure coping concepts; beliefs, and strategies. Leisure Coping Beliefs (LCB) refer to personal ideas regarding leisure participation and how leisure can help one cope with stress, quite often through the development of positive individual dispositions; whereas Leisure Coping Strategies (LCS) are behavioural and state-like actions, including participation in leisure as a means to objectively enhance coping through leisure participation. Each of these two concepts is hierarchically arranged into two subsequent levels of subdimensions that show specificity and

detail for both LCB and LCS. This hierarchy of leisure coping dimensions is shown in Figure 1 and is explained in further detail in the following sections.

Leisure Coping Beliefs

Leisure coping beliefs (LCB) are beliefs about leisure participation that are maintained through the socialisation process and actual participation in leisure activities (Iwasaki & Mannell, 2000). These beliefs constitute mostly stable psychological dispositions that assist in coping with stressful situations and negative events (Iwasaki & Mannell, 2000). LCBs are theorised to act as a buffer or moderator between the negative effects of stress on health and wellbeing (Coleman & Iso-Ahola, 1993), and are thought to be of benefit predominantly when stress levels are high (e.g., Coleman, 1993; Coleman & Iso-Ahola, 1993). There are two second-level subdimensions that contribute to the global measure of LCB. These sub dimensions include leisure autonomy and leisure friendships.

Leisure Autonomy refers to the belief that participation in leisure activities helps to develop personality characteristics (individual dispositions) that assist in dealing with stress (Iwasaki & Mannell, 2000). Leisure autonomy can be further broken down into two third-level subdimensions including self-determination disposition and empowerment (see Figure 1). Self-determination disposition refers to an individual's belief that his/her leisure behaviour is predominantly self-determined, freely chosen, or autonomous, therefore providing a sense of control and intrinsic motivation over his/her leisure experience (Iwasaki & Mannell, 2000). Empowerment refers to the belief that individuals are entitled to leisure and that leisure will provide essential experiences to allow for self-expression and challenge, fostering a valued sense of self (Iwasaki & Mannell, 2000). The development of individual dispositions to help buffer stress is a central theme in

the theory of protective factors developed by Caldwell (2005), with three of the seven factors linking back to leisure autonomy and the therapeutic benefit of personality dispositions developed through participation in leisure on stress and wellbeing.

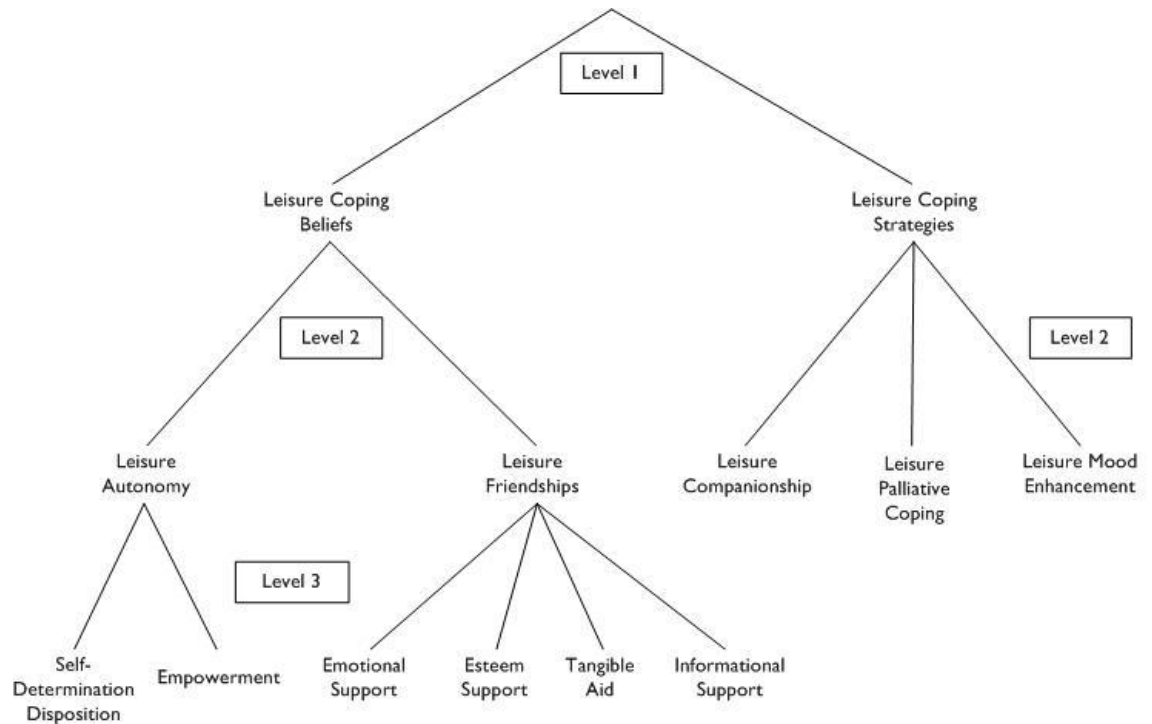


Figure 1. *Hierarchical dimensions of leisure stress-coping (Iwasaki & Mannell, 2000)*

The second subdimension for LCBs is leisure friendships, or the belief that friendships developed through leisure experiences can provide social support in times of stress. Friendships developed through leisure behaviour can assist individuals in coping with stress through the provision of support as indicated by the four third-level subdimensions including emotional support (support in the form of care or love), esteem support (the bolstering of self-esteem and/or self-respect), tangible aid (instrumental support such as financial aid or practical help to complete a task), and informational support (the provision of practical advice or information). This is congruent with the social support literature that views

social support as a multi-dimensional concept which has been conceptualised according to functional differences, including the four third-level subdimensions mentioned here (Iwasaki, 2003; Pierce, Sarason, & Sarason, 1996; Vaux, 1992). The definitions of the LCB third-level subdimensions are presented in Table 2 for clarification.

Table 2

Definitions for subdimension representing Leisure Coping Beliefs

Subdimension	Definition
	<i>Leisure Autonomy</i>
Self-Determination Disposition	People's general belief that their leisure behaviour is mainly self-determined, freely chosen, or autonomous; accordingly, a sense of control and intrinsic motivation is experienced in their leisure time.
Empowerment	People's general belief that they are entitled to leisure, that self-expression in leisure provides resources to challenge constraints in their lives, and that their leisure fosters a valued sense of self.
	<i>Leisure Friendships</i>
Emotional Support	Care or love by individuals' leisure-related friends, or a strong bond or closeness with them.
Esteem Support	The bolstering of individuals' self-esteem or self-respect by their leisure-related friends.
Tangible Aid	Instrumental support such as financial or tangible aid (e.g., assistance in moving) by leisure-related friends.
Informational Support	The provision of practical advice or information by individuals' leisure-related friends.

Note: Adapted from Iwasaki & Mannell (2000).

Leisure Coping Strategies

In comparison to LCB, Leisure Coping Strategies (LCS) refer to situation-grounded behaviours or cognitions generated through actual participation in leisure activities to help cope with stress (Iwasaki & Mannell, 2000). Different activities may be used as strategies to cope with stress, depending on the origin and type of stress being encountered. For example, a busy work schedule may encourage an individual to participate in an escapist leisure activity that involves relaxation through listening to music or attending a spa to escape the demands of work pressures. LCS therefore mediates the effects of stress on health through a process whereby certain stressful events trigger the use of specific types of leisure to enhance coping and protect the individual from negative effects. LCS represents a process or a specific behaviour as a way of coping and is based on the premise that when an individual encounters a stressful situation he/she will react or engage with certain coping actions to counteract the negative effects of the stressful situation (Iwasaki & Mannell, 2000).

There are three second-level subdimensions that help to describe LCS. These subdimensions are leisure companionship, leisure palliative coping, and leisure mood enhancement (see Figure 1). Leisure companionship refers to the idea that participation in leisure activities can provide discretionary and enjoyable shared experiences as a form of social support. In support of this subdimension, Iso-Ahola and Park (1996) found that individuals who experienced increased life stress and a low level of leisure companionship also reported a higher rate of depression comparative to individuals who reported a high level of leisure companionship. This outcome is consistent with the results of Rook (1987) who found leisure-generated companionship buffered life stress and enhanced

psychological wellbeing in individuals experiencing a considerable amount of stress when compared to individuals who were experiencing a small amount of stress. Although the two subdimensions of leisure friendship (LCB) and leisure companionship (LCS) seem similar, it is important to distinguish between leisure generated social support in relation to beliefs and strategies. Given leisure friendships is a subdimension of LCB, this subdimension is related to the perception or belief that friendships formed through leisure activities will provide social support in times of stress. For example, when an individual is experiencing a high level of stress it is the “knowing” that one has a network of friends to turn to for support, rather than the behavioural aspect of seeking social support per se that is important in this dimension. Leisure companionships, on the other hand, is a subdimension of LCS, and therefore concerned with the behavioural aspect of actually seeking out social support to alleviate stress. For example, an individual who is experiencing a high level of daily stress may intentionally seek out companionship through participation in social sport or alternatively may arrange to meet companions in a social gathering to help alleviate the effects of stress. Although both dimensions are a form of social support, each is indicative of the global dimensions of leisure coping, be it through beliefs (friendships) or actions (companionships).

Leisure palliative coping refers to the use of leisure as a form of escapism from stressful situations. Activities that provide a break in routine (e.g., a coffee break, a walk in the park, or weekend getaway) are theorised to help refresh and cognitively rejuvenate the individual, thereby helping to deal with stressful situations (Caldwell & Smith, 1995). Similarly, leisure mood enhancement refers to the use of specific leisure activities to help alleviate negative mood, enhancing

a positivistic attitude helping to regulate emotions during stress. Hull and Michael (1995) have suggested that certain types of leisure activities, namely nature-based recreation, are influential in enhancing positive mood and have stress-reducing potential.

Research involving HDLSC

Global dimensions of the HDLSC (e.g., LCB and LCS) are the foundation of leisure coping and represent techniques that are both dispositional and behavioural, respectively. The use of LCB and LCS is consistent with research by Iso-Ahola and Park (1996) who attribute the benefit from leisure participation in the presence of stress, rather than preventing the onset of stress. Iso-Ahola and Park surveyed 252 Taekwondo athletes using inventories measuring physical health, mental health, leisure generated self-determination and leisure generated social support indicators (e.g., leisure friendships and leisure companionships). Hierarchical multiple regression analysis was performed to determine the effects of stress on leisure factors and mental health. The main effects revealed a significant and negative association between depression and the level of social support derived from participation in leisure, as well as a significant and negative association between depression and the level of self-determination dispositions derived from participation in leisure, such as intrinsic leisure motivation and perceived leisure freedom. In addition, a statistically significant interaction effect was found between the social support measure of leisure companionship and life stress, indicating that depression increased as the reported level of stress increased for the participants in the low companionship group. Therefore, social support derived from leisure participation contributed to significant stress reduction, and

helped to improve mental health, but only in individuals who were currently experiencing high levels of stress (Iso-Ahola & Park, 1996).

The theoretical framework of the HDLSC (Iwasaki & Mannell, 2000) fits well within the psychological literature on stress resistance, in particular, the protective factors identified by Garmezy (1987). The first protective factor identified by Garmezy (1987) in promoting stress-resistance relates to the development of personality dispositions such as self-esteem and self-efficacy to help cope with stress. In relation to the HDLSC, this protective factor is similar to the LCB subdimension of leisure autonomy, which further breaks down into the dispositions of leisure generated self-determination and empowerment. In addition, leisure-specific protective factors identified by Caldwell (2005) make reference to these personality dispositions, in particular, self-efficacy, competence, and self-determination, as developed through participation in leisure activities, to assist individuals to deal with stress and promote a positive outcome. The second and third protective factors noted by Garmezy (1987) in promoting stress resistance include a supportive family environment and external support systems. These protective factors are similar to the subdimensions of leisure friendship and leisure companionship found under the global dimensions of LCB and LCS respectively. Furthermore, leisure-generated social support features quite prominently in Caldwell's (2005) leisure-specific protective factors. The development of leisure-generated personality dispositions and participation in social leisure have been reported to have a direct and positive influence on mental health in adolescence (Passmore & French, 2000). Therefore, the HDLSC provides a strong theoretical framework for research relating to leisure participation, coping, and stress resistance.

The majority of research specifically using the HDLSC has been conducted by the developers of the theory, Iwasaki and Mannell (2000). Iwasaki (2001) used the HDLSC to determine how leisure was used as a means to cope with stress, in a sample of university students. Eighty-five students from a Canadian university completed three phases of a study which included an initial assessment in which participants were asked to complete a questionnaire including inventories measuring leisure coping beliefs, mental ill-health, and psychological wellbeing. The second phase of the project, the periodic observation phase, required participants to record their most stressful events over a 2-week period in a log book as well as complete inventories measuring leisure coping strategies, general coping strategies, and immediate coping outcomes. The third phase of this study, the post-study assessment, occurred several days after the periodic observation phase and involved participants handing in their completed log-book of stressful events and a post-study questionnaire including inventories on mental ill-health and psychological wellbeing.

Results from the study (Iwasaki, 2001) showed that LCB and LCS both significantly and positively predicted immediate coping outcomes. Leisure coping uniquely explained approximately 7% ($p < 0.001$) of the total variance in immediate coping outcomes, including perceived coping effectiveness, perceived coping satisfaction, and perceived stress reduction. A greater use of LCB and LCS, significantly and positively predicted immediate coping outcomes (LCB, $\beta = 0.105$, $p < 0.05$; LCS, $\beta = 0.242$, $p < 0.01$). In addition, the LCB dimension significantly predicted lower levels of mental ill-health ($\beta = -0.155$, $p < 0.01$) and higher levels of psychological wellbeing ($\beta = 0.335$, $p < 0.01$) in this sample. The

LCS dimension did not significantly influence either of these factors (Iwasaki, 2001).

In a separate, yet related, publication that appears to report on the same data as Iwasaki (2001), Iwasaki (2003) addresses the influence of the LCB and LCS subdimensions (e.g., third level LCB and second level LCS) as predictors of immediate coping outcomes, physical health, and psychological wellbeing. Iwasaki (2003) identified positive and significant correlations between the third level LCB subdimensions of self-determination and empowerment with psychological wellbeing. In addition, a negative and significant correlation was found between empowerment and mental ill-health for this sample, suggesting a lower rate of mental ill-health in students who report a higher level of leisure-generated empowerment. The second level LCB subdimension of leisure friendship was also positively and significantly correlated with psychological wellbeing. For the second level LCS subdimensions, Iwasaki (2003) reported a positive and significant correlation between leisure companionship with the immediate coping outcome of perceived stress reduction. Leisure palliative coping (LCS), however, had a positive and significant correlation with mental ill-health and the immediate coping outcome of perceived stress reduction. This finding suggests that students who reported a greater use of leisure for palliative coping (e.g., escapism) also reported a higher rate of mental ill-health and a higher level of perceived stress reduction as an immediate coping outcome.

Using hierarchical multiple regression analysis, Iwasaki (2003) revealed that contrary to expectations, self-determination disposition predicted higher levels of physical ill-health and mental ill-health, and lower levels of psychological wellbeing. This finding contrasts with other research which linked

a self-determined disposition to higher levels of coping and greater overall health and wellbeing (Coleman, 1993; Coleman & Iso-Ahola, 1993). It is interesting to note that general social support (i.e., social support not explicitly linked to leisure participation), did not significantly predict any of the dependent variables in the Iwasaki (2003) study (e.g., physical ill-health, mental ill-health, and psychological wellbeing), despite being identified as a protective factor against stress resistance (Garmezy, 1987), and reportedly promoting resilience in high-risk children (Werner, 1989). The leisure-specific social support measure of leisure friendship, however, significantly predicted all outcome measures in the Iwasaki (2003) study including physical and mental ill-health and psychological wellbeing. Leisure friendships significantly predicted lower rates of physical and mental ill-health and higher rates of psychological wellbeing. It therefore appears that the *belief* that leisure-generated friendships can help people cope with stress is potentially more influential in promoting healthy outcomes than the availability of more general forms of social support.

This finding has two important implications for further research in the field of stress and coping. First, this finding suggests that it is an individual's belief or perception that there is support available from friendships developed through leisure participation that help to prevent mental ill-health and promote general wellbeing in times of stress, more so than the actual support provided by leisure-generated companions. Further research is required to determine whether this finding is exclusive to university samples or applicable to other populations groups, including adolescent and older adult samples. Additionally, friendships generated through leisure activities better predict lower levels of mental ill-health

and higher levels of psychological wellbeing than support sourced from other social networks, for example, work or family.

The majority of researchers investigating the effects of the HDLSC model (e.g., Iwasaki, 2001, 2003) have used university students to test the effects of the global categories and subdimensions on coping with stress. The role of the HDLSC may have a different effect on individuals at different stages of the lifecycle and more research is required to better understand the relationship between age and the use of LCB and LCS as measures of leisure coping behaviour. Despite the lack of success of LCS in predicting mental health outcomes, the use of LCS at different stages of the lifecycle requires further research to better determine the effects of LCS on health and wellbeing. Given the lifecycle focus of this research, the HDLSC model will be useful in helping to explain the effect of leisure participation on stress and coping for different lifecycle groups, in particular the influence of LCS.

Research Aim

Based on the aforementioned review of literature, there were three aims for this research.

The first aim was to provide data on the different activities individuals participate in for achievement, social, and time-out leisure for the four lifecycle groups, including adolescence, young adult, middle age, and older adulthood.

Second, there was a need to better describe the effects on mental ill-health of participation in different leisure activities based on reasons for participation for each lifecycle group. As previous research has focused predominantly on studying samples of adolescents and older adults, with conflicting results, identical self-

report measures of leisure participation and mental health were undertaken, with the intention being to help clarify the effects of leisure participation on mental ill-health across the lifecycle.

The third research aim was to better understand the HDLSC and the use of the LCB and LCS subdimensions across the lifecycle. The majority of previous research pertaining to the use of the HDLSC has dealt with select social groups, predominantly university students (e.g., Iwasaki, 2001, 2003), placing further emphasis on the call made by Cassidy (2005) for a lifespan focus on the effects of leisure participation on stress and wellbeing.

Three research questions were developed, based on the aforementioned literature, and designed to support the investigation of the effects of leisure participation and leisure coping on mental ill-health across the lifecycle. The three associated research hypotheses are presented below.

Research Question 1

Based on the three-factor typology of leisure classification by Passmore and French (2001), is there a difference in the participation of achievement leisure (DV), social leisure (DV), and time-out leisure (DV) between the four lifecycle groups (IV)? Three hypotheses for each dependent variable are presented to determine differences between the four lifecycle groups and gender for the frequency of participation, enjoyment of participation, and freedom to choose participation in the three dependent variables. Based on previous research (Zuzanek & Smale, 1997), an uneven distribution in the frequency of participation for each of the dependent variables is expected across the lifecycle groups. No association is expected between lifecycle groups on the enjoyment of

participation and the freedom to choose participation for each of the dependent variables. The three hypotheses for each of the leisure types are presented below.

Achievement leisure

H_0 : There will be no difference between the lifecycle groups on the frequency of participation in achievement leisure. H_1 : It is hypothesised that there will be a decrease in the frequency of achievement leisure for the middle age lifecycle group.

H_0 : There will be no difference between the lifecycle groups on the enjoyment of participation in achievement leisure. H_1 : It is hypothesised that there will be a difference between lifecycle groups for the enjoyment of participation in achievement leisure.

H_0 : There will be no difference between the lifecycle groups on the freedom to choose participation in achievement leisure. H_1 : It is hypothesised that there will be a difference between lifecycle groups for the freedom to choose participation in achievement leisure

Social leisure

H_0 : There will be no difference between the lifecycle groups on the frequency of participation in social leisure. H_1 : It is hypothesised that there will be a decrease in the frequency of social leisure for the middle age lifecycle group.

H_0 : There will be no difference between the lifecycle groups on the enjoyment of participation in social leisure. H_1 : It is hypothesised that there will be a difference between lifecycle groups for the enjoyment of participation in social leisure.

H_0 : There will be no difference between the lifecycle groups on the freedom to choose participation in social leisure. H_1 : It is hypothesised that there

will be a difference between lifecycle groups for the freedom to choose participation in social leisure.

Time-out leisure

H_0 : There will be no difference between the lifecycle groups on the frequency of participation in time-out leisure. H_1 : It is hypothesised that there will be a decrease in the frequency of time-out leisure for the middle age lifecycle group.

H_0 : There will be no difference between the lifecycle groups on the enjoyment of participation in time-out leisure. H_1 : It is hypothesised that there will be a difference between lifecycle groups for the enjoyment of participation in time-out leisure.

H_0 : There will be no difference between the lifecycle groups on the freedom to choose participation in time-out leisure. H_1 : It is hypothesised that there will be a difference between lifecycle groups for the freedom to choose participation in time-out leisure.

Research Question 2

Participation in achievement, social, and time-out leisure has been found to significantly predict levels of mental ill-health in adolescents (Passmore & French, 2000). Does actual participation in achievement, social, and time-out leisure significantly predict levels of mental ill-health in the four lifecycle cohorts in the present study? Alternatively, does perceived participation in achievement, social, and time-out leisure predict mental ill-health in the four lifecycle cohorts (Zuzanek, et al., 1998)?

H₀: Participation in achievement leisure, social leisure, and time-out leisure will not significantly predict levels of mental ill-health over the four lifecycle cohorts. H₁: It is hypothesised that participation in achievement and social leisure will significantly and negatively predict mental ill-health in all four of the lifecycle cohorts. Participation in time-out leisure is hypothesised to significantly and positively predict mental ill-health in all four lifecycle cohorts.

Research Question 3

Using the Hierarchical Dimensions of Leisure Stress Coping (HDLSC) (Iwasaki & Mannell, 2000), is there a difference *between* lifecycle groups in the use of Leisure Coping Beliefs (LCB), and Leisure Coping Strategies (LCS)? Based on previous research (Iwasaki, 2001, 2003), it is expected that the second level subdimensions of LCB and LCS will help to significantly predict mental ill-health for each lifecycle group.

H₀: LCB and LCS subdimensions will not predict mental ill-health in any of the lifecycle cohorts. H₁: It is hypothesised that the LCB subdimensions will significantly and negatively predict mental ill-health in all four lifecycle cohorts.

Conclusion

This research surveyed a cross section of participants from the Australian state of Tasmania. The following chapter provides detail of the research design, method of data collection, and data analysis.

CHAPTER 3

Method

Participants

Four different lifecycle groups were defined in this study to represent the lifecycle and these were based on Erikson's stages of life (Erikson, 1959) (see Table 1). Some minor changes were made to the age ranges for the purpose of this study, to ensure an even representation of individuals in each lifecycle group. These changes were based on the recommendations of Zuzanek et al. (1998). The lifecycle groups defined for the purpose of this study were adolescents (12-17 years), young adults (18-35 years), middle age adults (36-55 years), and older adults (56 years and above). Although Erickson originally defined eight stages of life, only four lifecycle groups were identified for this research due to ethical concerns relating to data collection from individuals in the first four stages of life. These stages of life include the infant stage (0-1 years), toddler stage (2-3 years), pre-school stage (3-6 years), and school age children (7-12 years). Data collection from these groups would have required the use of a different testing inventory to reliably measure leisure participation, and to test the effect of leisure participation on mental health, because the inventories used are designed for adolescent and/or adult populations and not appropriate for use with young children. As this was an exploratory study, no screening of participants for mental illness or chronic health problems was conducted for exclusion from the study.

A total of 38 organisations were contacted and 934 inventories distributed to members of these organisations. A wide variety of community and business organisations was canvassed to ensure there was an even representation of

lifecycle groups. These organisations included sporting clubs, educational institutions, workplaces, and community volunteer organisations. Up to eight organisations per life cycle group were contacted, ensuring a range of appropriate organisations within each life cycle group (i.e., workplaces were not contacted to recruit adolescent participants; schools were not contacted to recruit older adults). Adolescent participants were recruited through sporting clubs, educational institutions, and hobby groups (e.g., art classes). Young and middle age adults were contacted through a variety of sporting clubs, educational institutions, social/cultural groups (e.g., food appreciation groups, philosophical groups), workplaces, and volunteer associations. Older adult participants were recruited through social/cultural groups, workplaces, volunteer associations, and retirement homes. Even though each organisation was targeted with a certain lifecycle group in mind, an overlap in lifecycle groups was evident due to a diverse range of members in most organisations. In sporting clubs, the athletes as well as coaches and management would volunteer to participate, whilst in volunteer organisations, social/cultural groups, and workplaces the age range would encompass young adults, middle age adults, and in some instances, older adults. In addition, a variety of sporting clubs was contacted to specifically recruit parents of club members, not just the participants in the sport per se. This design ensured a representation of young and middle age adults who may not have been active in the workforce or involved in leisure activities easily accessible through clubs.

The number of inventories distributed per organisation was left up to the discretion of the manager of each organisation. Most organisations were given approximately 30-50 inventories to distribute. A response rate of approximately 44% was recorded ($n=406$). Due to the exploratory nature of this study, no a

priori power and effect size calculation was performed to determine the required number of participants per group. It is recommended that the results of this research are interpreted with caution. Table 3 below shows the number of respondents per lifecycle group.

Table 3

Number of Participants per Lifecycle Group

	Adolescent	Young Adult	Middle Age	Older Age	Total
Male	24	73	43	20	160
Female	48	93	66	39	246
Total	72	166	109	59	406

Inventory

This study used a self-report questionnaire made up of a number of different inventories to help determine the rate of leisure participation and the use of leisure coping beliefs and strategies on mental health across the lifecycle. The inventories compiled from the literature and used within this research were the Leisure Questionnaire (Passmore & French, 2001), the Leisure Coping Belief Scale (LCBS) (Iwasaki & Mannell, 2000), the Leisure Coping Strategies Scale (LCSS) (Iwasaki & Mannell, 2000), and the 12-item General Health Questionnaire (GHQ-12) (Goldberg & Williams, 1988). Demographic data were collected, based on the recommendations of Zuzanek et al. (1998), to measure variables that may impact on an individual's ability to participate in leisure activities and thus cope with stress. The demographic data collected included gender, educational attainment, employment status, marital status, and the

presence of children. Detailed descriptions of the inventories used to make up the questionnaire are described below.

The Leisure Questionnaire

Devised by Passmore and French (2001), the Leisure Questionnaire is designed to provide a measure of the types of activities people pursue in their free time, combined with the reason for participating in these activities. This questionnaire identifies the specific leisure activities that people engage in within a three-factor typology incorporating achievement leisure (activities that are competitive in nature and provide a personal challenge), social leisure (activities undertaken primarily to engage in social interaction), and time-out leisure (activities that are typically solitary or for relaxation purposes). The questionnaire contains 15 leisure-specific items measuring the number of activities participated in, the frequency of participation in leisure, the level of enjoyment of participation, and the freedom to choose participation in each of the three leisure typologies (e.g., achievement, social, and time-out).

Participants were first required to list all the activities they frequently participate in for achievement leisure, social leisure, and time-out leisure and then required to select three activities from each of these and to answer questions pertaining to the frequency, enjoyment, and freedom to choose participation for each. The frequency of participation for each of the three activities in each of the three leisure typologies was measured on a five-point continuous scale ranging from 1 (every few months) to 5 (daily participation). The level of enjoyment of participation for each of the three activities in each of the three typologies was measured on a four-point continuous scale ranging from 1 (not enjoyable) to 4

(very enjoyable). Finally, the freedom to choose each of the three activities in each typology was measured on a yes/no dichotomous scales (see Appendix A). A higher score on each of these factors reflected a greater frequency, enjoyment, and/or freedom to choose the specific type of leisure activity. Passmore (2003) demonstrated the reliability of this inventory by confirming the three-factor solution which accounts for 71.5% of the variance in the model. A Cronbach alpha value of 0.83 was also reported by Passmore, suggesting that the Leisure Questionnaire is a reliable measure of leisure participation.

Three additional questions were added to the original Leisure Questionnaire (Passmore & French, 2001) based on the findings of Zuzanek et al. (1998) regarding perceived participation in physical leisure. Zuzanek et al. found that when physical activity was measured subjectively (i.e., an individual's perception of their level of participation), physical activity contributed to lower levels of perceived stress than when measured objectively (i.e., an actual physical measure of the level of participation by an individual). In the original form of the Leisure Questionnaire, participants were asked to list all the activities they frequently participate in for achievement leisure, social leisure, and time-out leisure. Since this is an objective measure of participation, the additional questions aimed to measure the subjective or perceived participation in each of the three typologies of leisure (Passmore & French, 2001). The questions were adapted directly from Zuzanek et al. and required participants to indicate on a three-point continuous scale, how active they *felt* compared to other people of the same age for achievement leisure, social leisure, and time-out leisure. The Cronbach alpha value of these questions is 0.60. As the recommended acceptance level for reliability is a Cronbach alpha level of 0.70 (George & Mallery, 2009),

results pertaining to these questions should be viewed with caution. The Leisure Questionnaire, as distributed to the participants in this study, is presented in Appendix A.

Within the Leisure Questionnaire, there was opportunity to classify specific activities reported as achievement, social, or time-out leisure based on a leisure rubric devised specifically for this study. This leisure rubric is based on a similar construct devised for earlier studies by Passmore and French (Davina French, personal communication, March 6, 2006) and adapted from the work of Garton and Pratt (1991). The classification of specific types of leisure activities helps to better understand the activities pursued in each typology, including achievement, social, and time-out leisure. The leisure rubric is presented in Table 4.

Table 4

Leisure Rubric Used to Identify Specific Activities Common within the Three-Factor Typology of Leisure Participation

Code	Activity	Activities included
1	Sport	Cricket, football, soccer, rugby, hockey, tennis, athletics, abseiling, skiing, gymnastics, etc.
2	Water sports	Swimming, windsurfing, diving, sailing, boating, rowing, canoeing, water skiing, parasailing
3	Outdoor activities	Bushwalking, jogging, walking, biking, fishing, gardening, beach, camping, horse riding, four wheel driving, walking dog (<i>with or without others</i>)
4	Gregarious/Social	Parties, clubbing, visiting friends/family, hanging out, drinking with friends, eating out, coffee out, talking on the phone, going to the city
5	Entertainment	TV, DVD, radio, shopping, concerts, spectator at sports, board games, pool hall, reading
6	Expressive	Play music instrument, draw, paint, dance, sing, write, design
7	Hobbies /crafts	Sew, cook, collections, photography, model making, stamps
8	Serious/reflective	Reading literary texts, library, museums, gallery, study a subject of interest, thinking/reflecting, religion
9	Community	Attend church, volunteering, scouts/guides, surf lifesaver, community group, coaching sport, refereeing sport, managing sport or other group
10	Travel Related	Day trips, overseas travel, sightseeing, driving
11	Domestic Activities	Cleaning, babysitting, looking after children
12	Relaxation/Self-care	Spa, sauna, massage, bath, shower, sleep, sexual activity
13	Computer/On-line behaviour	Internet, email, MSN, computer games, programming, Facebook/MySpace
14	Exercise/fitness	Work out, Pilates, exercise, yoga, gym
15	Extreme Activities	Canyoning, caving, mountaineering, snowboarding, skydiving, base jumping

Note: Adapted from Passmore and French (Davina French, personal communication, March 6, 2006)

The Leisure Coping Belief Scale (LCBS)

The Leisure Coping Belief Scale (LCBS) is part of the Hierarchical Dimensions of Leisure Stress Coping (HDLSC) (Iwasaki & Mannell, 2000). The LCBS is a measure of an individual's enduring belief about the ways in which his/her leisure pursuits help him/her to cope with stress (Iwasaki & Mannell, 1999). Leisure coping beliefs have been described as individual dispositions that develop overtime through participation in leisure pursuits (Iwasaki & Mannell, 2000). The LCBS is made up of two second-level subdimensions that measure leisure autonomy and leisure friendships. The leisure autonomy subdimension refers to the belief that participation in leisure activities help to develop individual dispositions that assist in dealing with stress. The leisure autonomy subdimension breaks down into two third-level subdimensions, including self-determination disposition and empowerment. The leisure friendships subdimension refers to the belief that friendships developed through leisure experiences can provide a level of social support in times of stress. The leisure friendship subdimension breaks down into four third-level subdimensions, including emotional support, esteem support, tangible aid, and informational support. Definitions of these third level subdimensions are presented in Chapter 2 (Table 2). Figure 4 below shows the second- and third-level subdimensions of the LCBS.

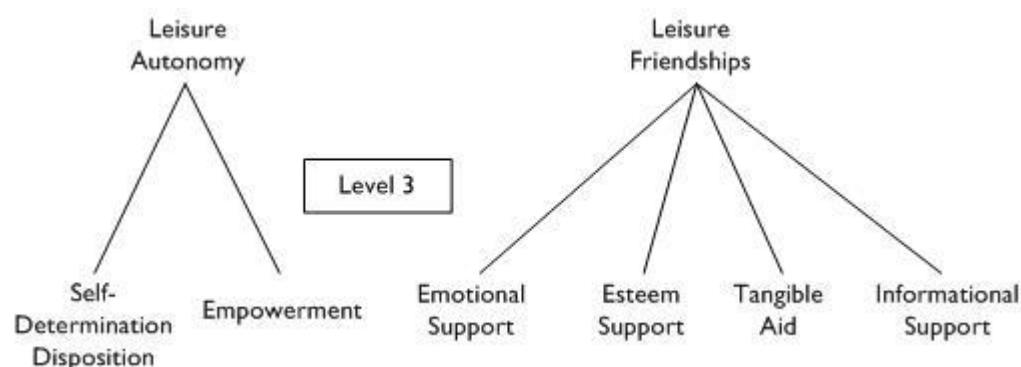


Figure 2. *Level 3 subdimensions of the Leisure Coping Belief Scale (adapted from Iwasaki & Mannell, 2000)*

The LCBS is therefore made up of two separate subscales, measuring leisure autonomy and leisure friendships. Fourteen separate items make up the Leisure Autonomy Scale, with seven items each representing the subdimension of self-determination and empowerment. Sixteen items make up the Leisure Friendships Scale, with four items making up each subdimension that indicates support from these friendships (e.g., emotional support, esteem support, tangible aid, and informational support). The items for each subscale that represent each subdimension are measured on a continuous scale ranging from one (very strongly disagree) to seven (very strongly agree). A score can be derived for each level of the hierarchy to determine overall leisure coping beliefs, leisure autonomy and leisure friendships, as well as the six third-level subdimensions of self-determination, empowerment, emotional support, esteem support, tangible aid, and informational support. A higher score for each of these dimensions and subdimensions reflect a greater reported level of leisure coping beliefs. Iwasaki and Mannell (2000) report a high reliability co-efficient for the LCBS, with moderately high to high reliability co-efficients for each of the third-level

subdimensions (see Table 5). The LCBS, as distributed to the participants in this study is presented in Appendix A.

Table 5

Reliability Co-efficients for the Leisure Coping Belief Scale and Subdimensions

Dimension	α
Overall Leisure Coping Belief	0.91
<i>Leisure Autonomy</i>	
Self-Determination	0.71
Empowerment	0.82
<i>Leisure Friendships</i>	
Emotional Support	0.70
Esteem Support	0.85
Tangible Aid	0.85
Informational Support	0.76

The Leisure Coping Strategies Scale (LCSS)

The Leisure Coping Strategies Scale (LCSS) is also part of the HDLSC (Iwasaki & Mannell, 2000). The LCSS is a measure of an individual's situation-specific behavioural and cognitive strategies for coping with stress, developed through participation in leisure (Iwasaki & Mannell, 1999). Leisure coping strategies are state-like and situation-grounded behaviours that reflect coping strategies developed through actual participation in leisure (Iwasaki & Mannell, 2000). The LCSS is made up of three second-level subdimensions that measure leisure companionship, leisure palliative coping, and leisure mood enhancement (see Figure 5).

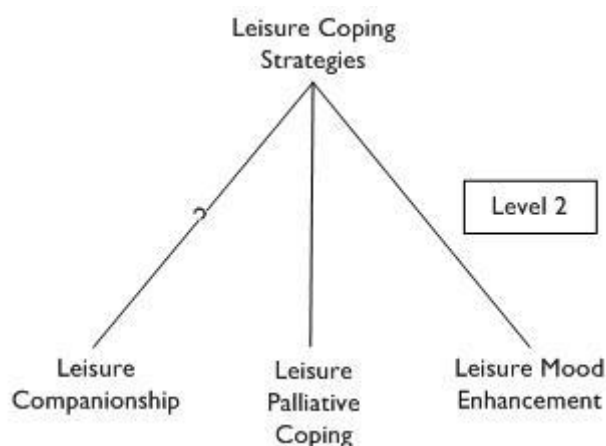


Figure 3. *Level 2 subdimensions of the Leisure Coping Strategies Scale (adapted from Iwasaki & Mannell, 2000)*

The leisure companionship subdimension measures actual social support originating from participation in leisure activities, while leisure palliative coping measures the use of leisure as a form of escape from daily activities to help cope with stress. Leisure mood enhancement measures the specific use of leisure activities to help alleviate negative mood. Unlike the leisure coping belief subscales, there is no further breakdown into third-level subdimensions. Six items make up each of the leisure coping strategies subdimension (LCSS) subscales including the Leisure Companionship Scale, the Leisure Palliative Coping Scale, and the Leisure Mood Enhancement Scale. The items that make up each of the subscales in the LCSS are measured on a continuous scale ranging from one (very strongly disagree) to seven (very strongly agree). A higher score for each of these dimensions and subdimensions reflect a greater reported level of leisure coping strategies. Iwasaki and Mannell (2000) report a high reliability co-efficient for overall Leisure Coping Strategies, with high reliability co-efficient for each of the second level subdimensions (see Table 6). The LCSS, as distributed to the participants in this study, is presented in Appendix A.

Table 6

Reliability Co-efficient for the Leisure Coping Strategies Scale and Subdimensions

Dimension	α
Overall Leisure Coping Strategies	0.93
Leisure Companionship	0.87
Leisure Palliative Coping	0.86
Leisure Mood Enhancement	0.85

12-item General Health Questionnaire (GHQ-12)

The original General Health Questionnaire (GHQ) was developed from the work of Goldberg et al. (1970) who developed an interview schedule to detect psychiatric illness in the general community. Based on this interview schedule, the pencil-and-paper version of the GHQ was developed by Goldberg (1972) as a self-report questionnaire used to measure the probability of individuals suffering from psychological illness in the community (Wright & Perini, 1987). The GHQ has since become one of the most widely used measures of non-psychotic mental illness in the community, and in general practices (Donath, 2001).

The original version of the GHQ was a 60-item questionnaire. Shorter versions (the 30-, 28-, 20-, and 12-item versions) have been developed and are based on the original 60-item questionnaire, thus allowing direct comparisons (Goldberg et al., 1997). The shorter versions of the GHQ are sometimes preferred over the original version due to their brevity and ease of administration. There has been limited research on the validity of the GHQ-12; nonetheless, a study comparing the validity the GHQ-28 with the GHQ-12 indicated that the GHQ-12 was remarkably robust and reliable for use as a screening instrument (Goldberg et al., 1997). In fact, the researchers of the above study recommended using the GHQ-12 over the 28-item version. Goldberg et al. reported the validity co-

efficients of the GHQ-12 for 15 centres around the world, indicating a range from 0.83 to 0.95, thus demonstrating that the GHQ-12 is a valid measure of psychological distress. The GHQ-12 has been used in leisure coping research by Cassidy (2005) who found that leisure attitude and leisure engagement were significantly and negatively correlated to mental-ill health as measured by the GHQ-12. Given the popularity of this measure to assess mental health in the general community, and the use of the measure in leisure coping research (e.g., Cassidy, 2005), the GHQ-12 (see Appendix A) was chosen for use in this study in order to test the hypotheses relating to mental ill-health, leisure participation, and leisure coping.

The scoring of the GHQ-12 is designed to distinguish between chronic-stable complaints and recent exacerbations. The participant responds to a set of 12 statements, indicating whether there has been a change in his/her usual self over the past 4 weeks (Wright & Perini, 1987). The scoring system of the GHQ-12 is varied, with three different scoring methods available. The three scoring methods are the classical scoring method, the corrected scoring method, and the Likert scoring method. In all cases a higher score indicates an increased likelihood of psychological distress.

The classical scoring method is the original scoring method and is essentially a dichotomous system that covers four possible response options. The first two responses to each statement are indicative of positive wellbeing and are therefore scored 0. The second two responses indicate psychological distress and are thus given a score of 1. The highest overall score using the classical scoring method is 12.

The corrected scoring system is similar to the classical approach, except that only the first response of the GHQ-12 is thought to be indicative of positive wellbeing and is thus scored 0. The following three response options are scored 1, and are thought to be indicative of recent exacerbations of chronic psychological conditions. This approach was devised by Goodchild and Duncan-Jones (1985) in an attempt to overcome the assumed sensitivity to chronic disorders, thus aiding the detection of chronic cases and improving the sensitivity of the GHQ. In this scoring method, any change is thought to indicate a potential rise of individual distress levels. Once again, the highest overall score using the corrected scoring method is 12.

Finally, the Likert scoring system involves the application of an ordinal scale for each item ranging from 0 (positive response) to 3 (negative response) to develop a wider range of responses and overall scores. Each of the possible four responses to each question on the GHQ-12 is coded on a continuous scale, with each response implying a slightly higher level of psychological distress. The highest overall score using the Likert scoring method for the GHQ-12 is 36, compared to 12 for the other two scoring methods.

The best scoring method to use has been a subject of much debate, with some studies finding little or no difference between the three different scoring methods (Goldberg et al., 1997; Gureje & Obikoya, 1990). Although a preference towards the classical scoring method was found in the Goldberg et al. study, a preference for the corrected scoring method was found in the Gureje and Obikoya study. More recent research has found that the Likert and corrected scoring approaches lead to goodness of fit indices that enabled a differentiation of models, whereas the classical scoring approach did not (Campbell & Knowles, 2007).

Based on a recommendation by Campbell and Knowles (2007) to use an ordinal scoring approach (e.g., Likert) for research purposes, and a dichotomous scoring approach (e.g., classical) for clinical purposes, the Likert scoring method of the GHQ-12 will be used to determine mental ill-health for participants within this study. A higher score on the GHQ-12 therefore reflects a higher level of mental ill-health.

Procedure

Due to the lifecycle focus in this research, a variety of clubs (sporting and hobby), educational institutions (high schools and university), workplaces (government), and organisations (volunteer) were canvassed around the Australian state of Tasmania to determine whether people in these organisations would like to participate in a study relating to leisure participation, stress, and coping. The clubs, schools, organisations, and workplaces canvassed were selected with an aim to supply a representative sample in regards to gender and lifecycle group.

Initial contact with groups was via telephone. Groups expressing interest were sent a “leisure pack,” including an information sheet detailing the aim of the study and method of participation (see Appendix B). The proposed method of data collection required the researcher to visit the group to conduct an information session and then administer the inventory on-site. However, many groups expressed concern with the time constraints this method of participation would place on members and in most cases offered to participate in the study by administering the inventory to their members as a take-home exercise, with the onus on the participant to voluntarily post the completed inventory to the

researcher in a reply-paid envelope to the Centre for Human Movement at the University of Tasmania. This method of administration was preferred by all groups involved; with the exception of educational groups (e.g., school and university) who administered the inventory during class time after obtaining informed consent (see Appendix B) from each participant (or guardian if the participant was under the age of 18 years).

Participation in the research was anonymous and participants were informed of their right to withdraw from the research at anytime, or to choose not to participate in the research (see Participant Information Sheet, Appendix B). Each participant was instructed to refrain from recording his or her name on the inventory to preserve anonymity. Instead, a random 4-digit code number was attached to the front of each inventory, and participants were encouraged to record this code number, and quote it to the researchers in the future if they wanted to withdraw from the study, in which case their data would be destroyed. No participants withdrew from the study after consenting to participate.

Completed inventories were returned to the university and immediately separated from the signed informed consent forms. Any incomplete inventories were discarded ($n=15$) along with inventories returned without a signed informed consent form ($n=6$). Responses from each inventory were entered into a database for analysis, with the original version of each inventory and signed consent forms kept in separate files in a locked filing cabinet at the University of Tasmania.

Research Design

The research design for this study was a cross-sectional design, with a quantitative method of data analysis. The majority of research in the field of leisure, stress, and coping has predominantly followed this method of inquiry, using self-report inventories to ascertain levels of stress, mental health, leisure coping behaviour, and participation in leisure activities (e.g., Cassidy, 2005; Coleman & Iso-Ahola, 1993; Iso-Ahola & Park, 1996; Iwasaki, 2001, 2003; Iwasaki, Mannell, Smale, & Butcher, 2005; Passmore, 2003; Passmore & French, 2000; Reich & Zautra, 1981; Szabo, 2003; Zuzanek, et al., 1998). Even though the inventories described are relevant to the field, and have been used in previous research involving leisure participation, stress, and wellbeing (Cassidy, 2005; Iwasaki, 2001; Passmore & French, 2000; Stetson, Rahn, Dubbert, Wilner, & Mercury, 1997), there was nevertheless potential for the effects of method variance to create bias due to the cross-sectional research design and the use of self-report measures (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Schmitt, 1994; Spector, 1994). These method biases are described below, together with the methodological procedures implemented to minimise the effects on the results.

The effects of social desirability, or the tendency to present oneself in a favourable light for social approval and acceptance while completing self-report inventories can produce relationships between variables that would not ordinarily exist (Podsakoff, et al., 2003; Schmitt, 1994). Within this study, the effects of social desirability were kept to a minimum through the provision of total anonymity for participants. In addition, method bias through using the same sample source to collect data on the predictor and criterion variables was kept to a minimum through creating a methodological separation within the inventory,

through using self-report measures that use different response formats (e.g., written responses, Likert scales, and rating scales) to prevent significant covariance. Creating a methodological separation reduces the salience of previous responses and diminishes the participant's ability and motivation to use previous responses to answer subsequent questions (Podsakoff, et al., 2003).

The context in which the inventory was administered, including the effects of the time and location of the administration, can also become a source of potential method variance. A systematic covariation attributed to method variance between variables is possible if the measurement of each variable shares a common measurement context (Podsakoff, et al., 2003). Because multiple workplaces, associations, and clubs were recruited to provide a wide variety of participants for each lifecycle group, the effects of time, location, and mood states during administration would have been variable and not as likely to create a common measurement context capable of producing a covariance between variables attributed to method variance.

Self-selection bias occurs when individuals select themselves into a group based on personal characteristics. For example, in the present study, individuals with an interest in leisure and/or mental health issues, or those who are community minded or physically active may be more like to volunteer for the study. Self selection has the potential to cause biases in the sample, creating abnormal or undesirable characteristics which may affect results (Ziliak & McCloskey, 2008). Self-selection is a common problem in many social science disciplines and presents difficulty in determining causation when interpreting results. As a self-selecting method of participation was unavoidable in this study, caution in interpreting results is recommended.

Despite the issues raised concerning the use of self-report questionnaires within a methodological framework, Howard (1994) questions the appropriateness of other measurement strategies in lieu of the self-report questionnaire (e.g., behavioural measurement, physiological measurement), in the realm of research involving attitudinal response. Howard reported on a series of studies (e.g., Cole, Howard, & Maxwell, 1981; Cole, Lazarick, & Howard, 1987; Gabbard, Howard, & Dunfee, 1986; Howard, Conway, & Maxwell, 1985; Howard, Maxwell, Wiener, Boynton, & Rooney, 1980) in which he and his colleagues assessed the construct validity of self-report indices of various constructs with various non-self-report indices of the same constructs and found the co-efficient of self-reports to be superior to the validity co-efficients of the non-self-report measurement approaches. Although one needs to be cautious when predicting outcomes from cross-sectional self-report studies, given a sound knowledge of the biases presumed within the framework and methods used to counteract these effects, this was arguably the best research method available to answer the questions posed within this study. The cross-sectional methodological framework presented was useful in contributing to the understanding of the effects of leisure participation on mental ill-health between the lifecycle groups.

As four separate lifecycle groups were used in the research, a cross-sectional design was regarded as beneficial in refining hypotheses, establishing potential links between variables to encourage future research, and gaining a broader understanding of the effects of leisure participation on mental ill-health between the lifecycle groups.

Analysis

The analysis of the data to answer the research questions posed in chapter 2 was conducted using the statistical analysis software program *SPSS* version 16.0 (SPSS Inc., 2007). To answer Research Question 1, a multivariate analysis of variance (MANOVA) was used to investigate any differences between the lifecycle groups on the frequency of participation, enjoyment of participation, and freedom to choose each type of leisure activity (e.g., achievement, social, and time-out leisure). The different types of leisure activities within each typology were investigated through an analysis of means and cross-tabulations for each lifecycle group. For the analysis relating to Research Question 2, a bivariate correlation analysis was used to determine the strength of the relationship between the frequency of participation in achievement, social, and time-out leisure with mental ill-health. A second bivariate correlation analysis was conducted to determine the strength of the relationship between the perceived participation in achievement, social, and time-out leisure. A multiple regression analysis was conducted to determine whether participation in achievement, social, or time-out leisure predicted mental ill-health in each of the four lifecycle groups. To answer Research Question 3, a multiple regression analysis was used to determine whether any of the second level subdimensions of LCB and LCS significantly predicted mental ill-health for each of the lifecycle groups. The results of the data analyses are reported in chapter 4 for Research Question 1, chapter 5 for Research Question 2, and chapter 6 for Research Question 3.

CHAPTER 4

Results – Research Question 1

Difference between Lifecycle Groups in Leisure Participation

The first research question sought to measure whether there were differences in specific types of leisure activities between the lifecycle groups. Data relating to the different types of activities that individuals participated in for achievement, social, and time-out leisure purposes are reported for each of the lifecycle groups using the Passmore and French three-factor typology (2001). Differences in the frequency, enjoyment, and freedom to choose participation in achievement, social, and time-out leisure were explored using a multivariate analysis of variance (MANOVA) for each lifecycle group based on the responses from the Leisure Questionnaire (Passmore & French, 2001).

In the light of previous research (Passmore & French, 2001; Zuzanek & Smale, 1997) three separate hypotheses predicted an uneven distribution in the frequency of participation in achievement leisure, social leisure, and time-out leisure across the lifecycle groups. In particular, it was expected that the middle age lifecycle group would report a lower frequency of participation in all three leisure types due to greater free-time constraints imposed by work commitments and familial obligations when compared to the other groups. There was no evidence to suggest a difference between lifecycle groups in the enjoyment of leisure, and/or freedom to choose participation in achievement, social, or time-out leisure. These variables were included in the analyses for exploratory purposes only.

Participation in Achievement Leisure

Achievement leisure activities are considered to be demanding and often competitive in nature, providing a sense of personal challenge (Passmore & French, 2001). The results of this study for achievement leisure participation indicated a difference between the lifecycle groups. Based on frequency percentages for participation in achievement leisure activities, there was a shift of focus from sports in adolescence, to semi-structured fitness regimes in young adulthood, to casual outdoor leisure pursuits in middle age and older adulthood. The percentage of individuals for each lifecycle cohort who reported participating in one or more of 15 specific categories of leisure activities for achievement purposes are presented in Table 7.

Table 7

Percent of Reported Participation in Each Type of Achievement Activity for Each Lifecycle Group

	Adolescence %	Young Adult %	Middle Age %	Older Adult %
Sport	83.9	63.9	44.0	33.9
Water sport	23.6	34.3	27.5	8.5
Outdoor activities	37.5	53.0	65.1	61.0
Social/gregarious	8.3	14.5	7.3	6.8
Entertainment	33.3	35.5	27.5	47.5
Expressive	29.2	21.7	10.1	32.2
Hobbies/crafts	11.1	15.7	32.1	45.8
Serious/reflective	15.3	19.9	11.9	39.0
Community	12.5	15.7	22.9	25.4
Travel	0.0	1.8	2.8	18.6
Domestic	1.4	3.6	10.1	13.6
Relaxation/self-care	6.9	6.6	1.8	1.7
Computer/on-line	5.6	4.8	6.4	13.6
Exercise/fitness	13.9	34.3	22.9	23.1
Extreme activities	5.6	8.4	11.0	0.0

The most frequently cited activity for achievement leisure in the adolescent and young adult lifecycle groups was participation in organised sports, with 83.9% of adolescents and 63.9% of young adults reporting participation in sport. These responses were collected using the Leisure Questionnaire (Passmore & French, 2001) (see Appendix A), which uses a multiple response format, hence each lifecycle cohort reported data total is greater than 100%. This difference between the adolescent and young adult lifecycle group is indicative of a potential decrease in participation in organised sports for achievement leisure across the lifespan.

The majority of the middle age and older age lifecycle groups reported participation in outdoor activities as their most frequently cited achievement leisure activity (65.1% and 61.0%, respectively). This category of activity included all types of outdoor-related activities that are not classified as organised sports, for example, running, jogging, going for walks, going to the beach, walking the dog, gardening, bushwalking, backyard games, camping, and going to the park. Participation in outdoor activities was higher for the middle age lifecycle group than for the adolescent (37.5%) and young adult lifecycle group (53.0%). This difference indicates a change in participation to outdoor activities for achievement leisure with increasing age. Although the most frequently cited achievement leisure activity for young adults was participation in organised sports, this lifecycle group also cited participation in water sports (34.3%) and exercise/fitness-type activities (34.3%) (see Table 7). In addition, participation in non-physical leisure pursuits, such as hobbies and crafts was a source of achievement leisure for the middle age (32.1%) and older adult lifecycle groups (45.8%), with older adults reporting participation in entertainment (47.5%),

serious and reflective leisure pursuits (39.0%), and expressive activities (32.2%) for achievement purposes. Older adults also reported the highest percentage of participation in community activities, including attending church, volunteering, and community group membership, for achievement leisure (25.4%).

A multivariate analysis of variance (MANOVA) tested the hypothesis that there would be no difference between the lifecycle groups in the frequency of participation in achievement leisure. As the Leisure Questionnaire (Passmore & French, 2001) also measures the enjoyment of participation and freedom to choose participation in achievement leisure, these variables were included in the analysis with a non-directional hypothesis to determine whether there were any differences between the lifecycle groups for enjoyment of participation and freedom to choose achievement leisure. Four lifecycle groups were used as the independent variables with the three factors, (a) the frequency of participation in achievement leisure, (b) the level of enjoyment of participating in achievement leisure, and (c) the freedom to choose participation in achievement leisure as the dependent variables.

The necessary assumption tests for MANOVA were performed. Bartlett's test for sphericity was significant ($p < 0.001$) and showed that significant intercorrelations of the dependent variables existed. This means that the residual covariances among the multiple dependent variables include at least one significant non-zero correlation; therefore the MANOVA model cannot completely explain the dependent variables. The Shapiro-Wilk statistic with a Lilliefors significance level was produced for each dependent variable across the levels of the independent variables. Normality of distribution was found for the frequency of achievement leisure for the adolescent and older adult cohort.

Normality of distribution was not assumed for the rest of the sample.

Transformation of the data was not conducted for ease of interpretability of the results in terms of frequency of participation. Transformation of data was not necessary as the violations of normality were due primarily to skewness of data, not outliers (Hair, Anderson, Tatham, & Black, 1995; Tabachnick & Fidell, 1996). Box's test of equality of covariance matrices showed that there was homogeneity of variance for this sample as the assumption had not been violated at an alpha level of 0.001 ($p < 0.05$). The Levene test of equality of error variances for each of the dependent measures indicated that the frequency of achievement leisure ($p > 0.05$) and the enjoyment of achievement leisure ($p > 0.05$) have not violated this assumption at an alpha level of 0.01. For freedom to choose achievement leisure, Levene's test of equality of error variances was significant ($p < 0.05$) and therefore any interpretation of significant findings for this variable were at a more conservative level ($p < 0.01$).

Having determined that the assumptions for conducting a MANOVA were mostly met, a Bonferroni correction method was used to produce an adjusted alpha level of 0.017 ($0.05/3$), thereby decreasing the chance of Type I error. The multivariate tests of overall difference using Wilks' Lambda among groups for achievement leisure is significant for lifecycle $F(3, 308) = 3.83, p < 0.001$. Thus this showed that participation in achievement leisure was significantly affected by lifecycle.

Frequency of achievement leisure

The univariate between-subject tests revealed a small effect size ($\eta^2=0.08$), with a main effect for the frequency of achievement leisure for lifecycle group not due to chance $F(3, 308)=8.78, p<0.0001$. Therefore, there was a significant difference between lifecycle groups in the frequency of participation in achievement leisure. The mean score for frequency of participation in achievement leisure for each age group is reported in Table 8.

Table 8

Frequency of Weekly Participation in Achievement Leisure per Lifecycle Group

				95% Confidence Interval for Mean	
	Mean	Standard Deviation	Standard Error	Lower Bound	Upper Bound
Adolescent	11.04	1.92	0.26	10.51	11.56
Young Adult	10.63	2.31	0.19	10.23	11.02
Middle Age	9.49	2.30	0.25	8.98	10.00
Older Adult	11.26	1.78	0.27	10.62	11.72

Follow up post hoc comparisons (Tukey) revealed that the frequency of participation in achievement leisure activities was significantly different in the middle age lifecycle group, comparative to all other groups. Participants in the middle age lifecycle group participated significantly less frequently in achievement leisure activities compared to those in the adolescent ($p<0.0001$), young adult ($p<0.001$), and older adult ($p<0.0001$) lifecycle groups. Due to the power observed (0.99), the hypothesis that there would be a decrease in the frequency of achievement leisure, for the middle age lifecycle group is accepted. As the assumptions for conducting a MANOVA were not completely satisfied, a degree of caution should be used for any interpretation of this result.

Enjoyment of achievement leisure

The univariate between-subjects tests for the level of enjoyment in achievement leisure revealed a small effect size ($n^2=0.02$) with no significant main effects for lifecycle group $F(3, 308)=2.33, p=0.08$. The mean score for the level of enjoyment in achievement leisure for each lifecycle group is reported in Table 9.

Table 9

Enjoyment of Participation in Achievement Leisure per Lifecycle Group

				95% Confidence Interval for Mean	
	Mean	Standard Deviation	Standard Error	Lower Bound	Upper Bound
Adolescent	10.31	1.30	0.21	10.01	10.82
Young Adult	10.16	1.48	0.12	9.94	10.42
Middle Age	10.26	1.53	0.16	9.98	10.61
Older Adult	10.80	1.26	0.22	10.38	11.24

The mean enjoyment rate of participation was relatively unchanged across the lifecycle groups, with the older adult cohort revealing a slightly higher level of enjoyment in achievement leisure than the other lifecycle groups. To prevent a Type II error, caution is needed in rejecting the hypothesis because of the observed low power (0.58) to detect the small effect size.

Freedom to choose achievement leisure

The univariate between-subjects tests for the freedom to choose achievement leisure revealed a small effect size ($n^2=0.01$) with no significant main effects for lifecycle group $F(3, 308)=0.52, p=0.67$. The mean score for the

freedom to choose achievement leisure for each lifecycle group is shown in Table 10.

Table 10

Freedom to Choose Achievement Leisure Activities per Lifecycle Group

	95% Confidence Interval for Mean				
	Mean	Standard Deviation	Standard Error	Lower Bound	Upper Bound
Adolescent	5.93	0.26	0.06	5.83	6.06
Young Adult	5.90	0.34	0.03	5.84	5.97
Middle Age	5.85	0.46	0.05	5.76	5.94
Older Adult	5.89	0.53	0.06	5.80	6.03

The mean score for the freedom to choose participation in achievement leisure remained unchanged across the lifecycle groups. The mean score for each lifecycle cohort was greater than 5.80, which is close to the total possible score of six, which suggests a universal importance of choice in achievement leisure. To prevent a Type II error, caution is needed in rejecting the hypothesis because of the observed low power (0.16) to detect the small effect size.

Participation in Social Leisure

Social leisure activities are activities that are undertaken for the purpose of being in the company of others (Passmore & French, 2001). The most frequently cited social leisure activity for all age groups except the adolescent group, was participation in social and gregarious activities, including visiting friends/family, going to a pub/club, going out to dinner, having coffee, drinking with friends, going to a party. The majority of adolescents (60.3%) reported participation in entertainment related activities (e.g., movies, games, music) as the most

frequently cited social leisure activity, with social and gregarious activities as the second most frequently cited activity (54.4%). Table 11 contains the percentage of individuals participating in one or more of 15 types of leisure activities for social reasons. These responses were collected using a multiple response format.

Table 11

Percent of Reported Participation in Each Type of Social Activity for Each Lifecycle Group

	Adolescence %	Young Adult %	Middle Age %	Older Adult %
Sport	52.9	47.3	23.4	16.9
Water sport	16.2	21.2	13.1	3.4
Outdoor activities	47.1	48.5	50.5	33.9
Social/gregarious	54.4	75.5	70.1	69.5
Entertainment	60.3	56.4	51.4	50.8
Expressive	13.2	11.5	10.3	22.0
Hobbies/crafts	2.9	4.2	9.3	10.2
Serious/reflective	14.7	10.9	8.4	39.0
Community	4.4	11.5	11.2	37.3
Travel	7.4	4.8	10.3	11.9
Domestic	1.5	0.6	1.9	1.7
Relaxation/self-care	5.9	3.6	1.9	6.8
Computer/on-line	2.9	3.6	0.0	3.4
Exercise/fitness	11.8	12.7	6.5	8.5
Extreme activities	2.9	6.1	8.5	0.0

There were differences between lifecycle groups in the types of activities participated in for social reasons. The adolescents and young adult group reported a relatively high level of participation in organised sports (52.9% and 47.3%) and outdoor activities (47.1% and 48.5%) for social reasons. These activities included participation in organised sports such as tennis, netball, cricket and volleyball, as well as outdoor activities such walking, camping, and bushwalking. Half of the middle age lifecycle group (50.5%) and just over a third of older adult lifecycle group (33.9%) reported participation in outdoor activities for social reasons.

Approximately one quarter of the middle age lifecycle group (23.4%) reported participation in organised sports for social leisure. Slightly fewer older adults cited participation in organised sports (16.9%). The older lifecycle group reported participation in serious and reflective activities (e.g., studying, reading literary texts) (47.5%), and community activities (e.g., volunteering, attending church) (45.8%) as a source of social leisure (see Table 9). Participation in these activities seems variable between the lifecycle groups, with a marked increase in participation for social reasons for the older adult lifecycle groups comparative to the other lifecycle groups.

A multivariate analysis of variance (MANOVA) tested the second hypothesis that there would be a difference between the lifecycle groups in the frequency of participation in social leisure. As the Leisure Questionnaire (Passmore & French, 2001) also measures the enjoyment of participation and freedom to choose participation in social leisure, these variables were included in the analysis with a non-directional hypothesis to determine whether there were any differences between the lifecycle groups for enjoyment of participation and freedom to choose social leisure. The same four independent variables were those used in the first MANOVA (lifecycle groups) with three dependent variables being (a) the frequency of participation in social leisure, (b) the level of enjoyment of participating in social leisure, and (c) the freedom to choose participation in social leisure.

The necessary assumption tests for MANOVA were performed. Bartlett's test for sphericity was significant ($p < 0.001$) and show that significant intercorrelations of the dependent variables exist. This means that the residual covariances among the multiple dependent variables included at least one

significant non-zero correlation; therefore the MANOVA model cannot completely explain the dependent variables. The Shapiro-Wilk statistic with a Lilliefors significance level was produced for each dependent variable across the levels of the independent variables. Normality of distribution was found for the frequency of social leisure for the adolescent cohort ($p>0.05$). Normality of distribution was not assumed for the rest of the sample. MANOVA is a fairly robust test that can tolerate some of its assumptions not being met, therefore, given the violations of normality were not due to outliers, transformation of the data was not necessary (Hair, et al., 1995; Tabachnick & Fidell, 1996). Box's test of equality of covariance matrices showed there was homogeneity of variance for this sample as the assumption was not violated at an alpha level of 0.001 ($p<0.05$). The Levene test of equality of error variances for each of the dependent measures indicates that the frequency of social leisure ($p>0.05$) and the enjoyment of social leisure ($p>0.05$) had not violated this assumption at an alpha level of 0.01. For freedom to choose social leisure, Levene's test of equality of error variances is significant ($p<0.05$) and therefore any interpretation of significant findings for this variable will be at a more conservative level ($p<0.01$).

Having determined that the assumptions for conducting a MANOVA were mostly met, a Bonferroni correction method was used to produce an adjusted alpha level of 0.017 ($0.05/3$), thereby decreasing the chance of Type I error. Using Wilks' Lambda, the multivariate tests of overall difference among groups for social leisure was not significant for lifecycle $F(3, 315)=2.10, p<0.03$. Thus, this shows that participation in social leisure is not significantly affected by lifecycle.

Frequency of social leisure

The univariate between-subject tests reveal a small effect size ($n^2=0.05$) with the main effect for the frequency of social leisure for lifecycle group not due to chance $F(3, 315)=5.20, p<0.002$. Therefore, lifecycle group significantly affects the frequency of participation in social leisure. The mean score for frequency of participation in social leisure for each lifecycle cohort is shown in Table 12.

Table 12

Frequency of Weekly Participation in Social Leisure per Lifecycle Group

				95% Confidence Interval for Mean	
	Mean	Standard Deviation	Standard Error	Lower Bound	Upper Bound
Adolescent	9.89	2.15	0.288	9.32	10.47
Young Adult	9.60	2.35	0.193	9.23	9.99
Middle Age	8.59	2.59	0.290	8.04	9.19
Older Adult	8.74	1.93	0.292	8.14	9.32

Follow up post hoc comparisons (Tukey) showed that the frequency of participation in social leisure activities was different in the middle age lifecycle group, comparative to the adolescent and young adult groups. The middle age group reported participating significantly less frequently in social leisure activities compared to adolescent group ($p<0.01$), and the young adult ($p<0.02$) group. There was no significant difference between middle age and older age groups in the frequency of participation in social leisure activities. Similarly, there was no significant difference between adolescent and young adult groups with the older age group. Due to the power observed (0.93), the hypothesis that there would be a decrease in the frequency of social leisure, for the middle age lifecycle group is

accepted. As the assumptions for conducting a MANOVA were not completely satisfied, a degree of caution should be used for any interpretation of this result.

Enjoyment of social leisure

The univariate between-subjects tests for the level of enjoyment in social leisure revealed a small effect size ($\eta^2=0.003$) with no significant main effects for lifecycle group $F(3, 315)=0.36, p=0.78$. The mean score for the level of enjoyment in social leisure for each lifecycle group is shown in Table 13.

Table 13

Enjoyment of Participation in Social Leisure per Lifecycle Group

	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
Adolescent	10.55	1.17	0.182	10.18	10.90
Young Adult	10.72	1.27	0.107	10.52	10.94
Middle Age	10.76	1.31	0.150	10.39	10.98
Older Adult	10.63	1.27	0.223	10.13	11.00

The level of enjoyment of participation in social leisure was similar across the lifecycle groups, indicating a high level of enjoyment (i.e., very enjoyable) as measured by the Leisure Questionnaire (Passmore & French, 2001). To prevent a Type II error, caution is needed in rejecting the hypothesis because of the observed low power (0.12) to detect the small effect size.

Freedom to choose social leisure

The univariate between-subjects tests for the freedom to choose social leisure reveal a small effect size ($n^2=0.01$) with no significant main effects for lifecycle group $F(3, 315)=1.00, p=0.39$. The mean score for the freedom to choose social leisure for each lifecycle group is shown in Table 14.

Table 14

Freedom to Choose Social Leisure Activities per Lifecycle Group

	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
Adolescent	5.86	0.35	0.045	5.76	5.94
Young Adult	5.93	0.28	0.026	5.88	5.99
Middle Age	5.91	0.33	0.037	5.83	5.98
Older Adult	5.95	0.31	0.055	5.86	6.08

The mean score for the freedom to choose participation in social leisure is the same between lifecycle groups. The mean score for each lifecycle cohort was greater than 5.80, which is close to the total possible score of six, which suggests a universal importance of choice in social leisure. To prevent a Type II error, caution is needed in rejecting the hypothesis because of the observed low power (0.27) to detect the small effect size.

Participation in Time-Out Leisure

Time-out leisure has been identified as activities that are relaxing, undemanding, and a way to pass the time (Passmore & French, 2001). Therefore it is not surprising that the majority of participants in all four lifecycle groups reported participating in entertainment related activities (e.g., movies, games,

music) for time-out leisure. The percentage of respondents in each lifecycle group who reported participation in entertainment for time-out leisure is extremely high with 85.7% of adolescents, 89.2% of young adult, 89.3% of middle age, and 91.4% of older adults citing participation for time-out reasons. The percentage of individuals in each lifecycle cohort who reported participating in one or more of the 15 specific categories for time-out leisure activities are presented in Table 15. These responses were collected using a multiple response format.

Table 15

Reported Participation in Each Type of Time-Out Leisure Activity for Each Lifecycle Group

	Adolescence %	Young Adult %	Middle Age %	Older Adult %
Sport	7.9	5.1	4.8	5.2
Water sport	14.3	17.3	13.1	3.4
Outdoor activities	39.7	56.1	59.5	63.8
Social/gregarious	6.3	24.5	19.0	29.3
Entertainment	85.7	89.2	89.3	91.4
Expressive	14.3	12.9	11.9	12.1
Hobbies/crafts	9.5	25.9	25.0	27.6
Serious/reflective	9.5	8.6	10.7	22.4
Community	0.0	1.4	1.2	5.2
Travel	1.6	13.7	4.8	17.2
Domestic	3.2	5.0	2.4	5.2
Relaxation/self-care	38.1	25.9	25.0	8.6
Computer/on-line	42.9	26.6	15.5	15.5
Exercise/fitness	9.5	11.5	10.7	8.6
Extreme activities	0.0	0.0	0.0	0.0

Over half of the young adult and middle age lifecycle groups reported outdoor activities (56.1% and 59.5%, respectively) as a source of time-out leisure. Participation in outdoor activities for time-out purposes showed a difference across the lifecycle groups, with older adults reporting more participation in outdoor activities for time-out leisure than any other lifecycle group (63.8%).

Although not the highest reported time-out leisure activity, participation in physical leisure activities (e.g., outdoor activities) was a prominent source of time-out leisure across the lifecycle groups. Furthermore, just under half of all adolescents (42.9%) reported participation in computer and online activities (e.g., computer games, surfing the internet) as a source of time-out leisure, comparative to the other lifecycle groups where participation in computer and online activities decreased with increasing age. The adolescent lifecycle group reported participation in relaxation and self-care type activities (e.g., shower/bath, massage, spa, sexual activity) (38.1%) more frequently than the other lifecycle groups. Only one quarter of the young adult and middle age lifecycle groups reported participation in relaxation and self-care activities for time-out purposes, with approximately 10% of the older adult cohort reporting participation (see Table 15).

A multivariate analysis of variance (MANOVA) tested the third hypothesis that there would be a difference between the lifecycle groups in the frequency of time-out leisure. As the Leisure Questionnaire (Passmore & French, 2001) also measures the enjoyment of participation and freedom to choose participation in time-out leisure, these variables were included in the analysis with a non-directional hypothesis to determine whether there are any differences between the lifecycle groups for enjoyment of participation and freedom to choose time-out leisure. A multivariate analysis of variance (MANOVA) assessed differences between the lifecycle groups. The same four independent variables were those used in the first and second MANOVA (lifecycle groups) with three dependent variables being (a) the frequency of participation in time-out leisure,

(b) the level of enjoyment of participating in time-out leisure, and (c) the freedom to choose participation in time-out leisure.

The necessary assumption tests for MANOVA were performed including Bartlett's test for sphericity the Shapiro-Wilk, Box's test of equality of covariance matrices, and Levene test of equality of error variances. Normality of distribution was not found for any of the dependent variables for any lifecycle group as determined by Shapiro-Wilk, nor was homogeneity of variance assumed (Box's Test). Transformation of data was not conducted, however, as the violations of normality were due primarily to skewness of data and not outliers (Hair, et al., 1995; Tabachnick & Fidell, 1996). Despite MANOVA being a fairly robust test that can tolerate some of its assumptions not being met, any results from this analysis should be interpreted with caution.

Having determined that the assumptions for conducting a MANOVA were mostly met, a Bonferroni correction method was used to produce an adjusted alpha level of 0.017 (0.05/3), thereby decreasing the chance of Type I error. Using Wilks' Lambda, the multivariate tests of overall difference among groups for time-out leisure was significant for lifecycle $F(3, 335)=3.56, p<0.0001$. Thus this shows that participation in time-out leisure was significantly affected by lifecycle.

Frequency of time-out leisure

The univariate between-subject tests revealed a small effect size ($\eta^2=0.09$) with the main effect for the frequency of time-out leisure for lifecycle groups not due to chance $F(3,335)=10.42, p<0.0001$. Therefore, lifecycle group significantly affected the frequency of participation in time-out leisure. The mean score for

frequency of participation in time-out leisure for each age group is shown in Table 16.

Table 16

Frequency of Weekly Participation in Time-Out Leisure per Lifecycle Group

	95% Confidence Interval for Mean				
	Mean	Standard Deviation	Standard Error	Lower Bound	Upper Bound
Adolescent	13.22	1.60	0.217	12.79	13.66
Young Adult	11.90	2.31	0.191	11.53	12.28
Middle Age	11.52	2.43	0.261	11.00	12.04
Older Adult	13.06	1.87	0.254	12.55	13.57

Follow up post hoc comparisons (Tukey) showed that the frequency of participation in time-out leisure activities is different in the adolescent and older age lifecycle cohort, comparative to the young adult and middle age groups. Adolescents participated significantly more frequently in time-out leisure activities compared to young adult ($p < 0.001$), and middle age ($p < 0.0001$) lifecycle groups. The older adult lifecycle group participated significantly more frequently in time-out leisure activities compared to young adult ($p < 0.006$) and middle age ($p < 0.0001$) groups. There was no significant difference between the adolescent group and older adult group in the frequency of participation in time-out leisure activities. Due to the power observed (0.99), the hypothesis that there would be a decrease in the frequency of time-out leisure, for the middle age lifecycle group is accepted. As the assumptions for conducting a MANOVA were not completely satisfied, a degree of caution should be used for any interpretation of this result.

Enjoyment of time-out leisure

The univariate between-subjects tests for the level of enjoyment in time-out leisure revealed a small effect size ($n^2=0.003$) with no significant main effects for lifecycle group $F(3, 335)=0.34, p=0.80$. The mean score for the level of enjoyment in time-out leisure is shown in Table 17.

Table 17

Enjoyment of Participation in Time-Out Leisure per Lifecycle Group

	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
Adolescent	10.31	1.44	0.201	9.91	10.70
Young Adult	10.45	1.46	0.118	10.23	10.70
Middle Age	10.55	1.32	0.159	10.21	10.84
Older Adult	10.40	1.36	0.208	9.99	10.81

The enjoyment of time-out leisure did not reveal any statistically significant differences between the lifecycle groups. In fact, the level of enjoyment of time-out leisure was equal across the lifecycle groups, indicating a high level of enjoyment (i.e., very enjoyable) for each lifecycle cohort. To prevent a Type II error, caution is needed in rejecting the hypothesis because of the observed low power (0.12) to detect the small effect size.

Freedom to choose time-out leisure

The univariate between-subjects tests for the freedom to choose time-out leisure revealed a small effect size ($n^2=0.03$) with no significant main effects for lifecycle group $F(3, 335)=0.35, p=0.79$. The mean score for the freedom to choose time-out leisure for each lifecycle group is shown in Table 18.

Table 18

Freedom to Choose Time-Out Leisure Activities per Lifecycle Group

	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
Adolescent	5.94	0.30	0.031	5.89	6.01
Young Adult	5.95	0.22	0.018	5.92	5.99
Middle Age	5.97	0.18	0.024	5.91	6.01
Older Adult	5.98	0.14	0.032	5.92	6.05

The mean score for the freedom to choose participation in time-out leisure is the same between lifecycle groups. The mean score for each lifecycle cohort was greater than 5.80, which is close to the total possible score of six, which suggests a universal importance of choice in social leisure. To prevent a Type II error, caution is needed in rejecting the hypothesis because of the observed low power (0.12) to detect the small effect size.

The results confirm previous research indicating an uneven distribution of the frequency of participation for each of the dependent variables (achievement, social, and time-out leisure) across the lifecycle groups. The middle age lifecycle group reported significantly less frequent participation in all three leisure types, as expected. These hypotheses were accepted with caution as not all statistical assumptions of MANOVA were met before analysis. No significant relationship was found between lifecycle group and the enjoyment of participation and the freedom to choose participation for each of the dependent variables, accepting the null hypothesis.

CHAPTER 5

Results – Research Question 2

Leisure Participation and Mental Ill-Health

Based on previous research using the three-factor typology of leisure participation (Passmore & French, 2000), it is hypothesised that participation in achievement and social leisure will negatively predict mental ill-health in all four of the lifecycle groups. That is, more frequent participation in achievement leisure and/or social leisure will contribute to lower levels of mental ill-health.

Participation in time-out leisure is hypothesised to positively predict mental ill-health in all four lifecycle groups, with more frequent participation contributing to higher levels of mental ill-health across the lifecycle groups. More frequent participation in achievement and/or social leisure activities is therefore, hypothesised to increase wellbeing across the lifecycle.

A bivariate correlation analysis revealed only one significant correlation between leisure participation and mental ill-health (see Table 19). This significant correlation was between mental ill-health and the frequency of achievement leisure for the older adult lifecycle group ($r=0.318$, $p<0.05$). Not only is this result contrary to previous research (Menec, 2003; Passmore & French, 2000), but the magnitude of correlation is low to moderate according to Cohen's scale (1988). All other correlation coefficients between the frequency of participation in achievement, social, or time-out leisure and mental ill-health for any of the lifecycle groups were not significant and were low in magnitude (i.e., $r<0.3$).

In addition to completing the Leisure Questionnaire (Passmore & French, 2001), participants completed three additional questions based on previous

research by Zuzanek et al. (1998) regarding perceived participation in leisure (see Appendix A). Based on the findings of Zuzanek et al., it was expected that a negative association between mental ill-health and perceived participation in the three types of leisure activities would be found. In fact, several significant correlation coefficients were found, in particular, significant correlations between the perceived participation in social leisure and mental ill-health for the young adult ($p < 0.01$) and middle age ($p < 0.05$) lifecycle groups, yet the magnitude of the correlations was small ($r < 0.3$). Significant correlation coefficients between the perceived participation in time-out leisure and mental ill-health were evident in the adolescent ($r = -0.354$, $p < 0.001$) and the middle age ($r = -0.317$, $p < 0.001$) lifecycle groups and were low to moderate in magnitude. The greater number of significant correlations between mental ill-health and the perceived participation in leisure, compared to the number of significant correlations between mental ill-health and the actual frequency of participation in leisure, confirms previous research findings that perceived participation in leisure is associated significantly with lower stress levels (Zuzanek, et al., 1998).

Table 19
Correlation Matrix between Leisure Participation and Mental Ill-Health for Each Lifecycle Group

	Mental ill- health	Frequency of achievement	Frequency of social	Frequency of time-out	Perceived achievement	Perceived social	Perceived time-out
Adolescent							
Mental ill-health							
Frequency of achievement	0.105						
Frequency of social	0.014	0.282					
Frequency of time-out	0.170	0.124	-0.007				
Perceived achievement	-0.201	-0.042	0.082	0.026			
Perceived social	-0.160	0.038	-0.051	-0.071	0.154		
Perceived time-out	-0.354**	0.318*	-0.072	-0.149	0.231	0.209	
Young Adult							
Mental ill-health							
Frequency of achievement	-0.146						
Frequency of social	-0.088	0.339**					
Frequency of time-out	-0.004	0.224*	0.238**				
Perceived achievement	-0.076	0.285**	0.101	0.031			
Perceived social	-0.266**	-0.045	0.218**	0.112	0.268**		
Perceived time-out	-0.150	0.119	0.115	0.214**	0.187*	0.290**	
Middle Age							
Mental ill-health							
Frequency of achievement	-0.015						
Frequency of social	0.176	0.370**					
Frequency of time-out	0.183	0.433**	0.375**				
Perceived achievement	-0.152	0.051	0.172	0.211			
Perceived social	-0.248*	0.095	0.089	0.015	0.427**		
Perceived time-out	-0.317**	0.205	0.178	0.310**	0.278**	0.480**	
Older Adult							
Mental ill-health							
Frequency of achievement	0.318*						
Frequency of social	0.090	0.111					
Frequency of time-out	0.203	0.177	0.215				
Perceived achievement	-0.238	-0.192	0.062	-0.172			
Perceived social	-0.039	-0.051	0.239	-0.073	0.242		
Perceived time-out	-0.201	-0.020	-0.032	0.073	0.264	0.451**	

Note: * $p < 0.05$; ** $p < 0.01$

Since the hypothesis regarding the frequency of participation in achievement leisure, social leisure, and time-out leisure with mental ill-health was not supported by the correlations, multiple regression analysis was performed using only the three variables measuring perceived participation in achievement, social, and time-out leisure (Zuzanek, et al., 1998) to determine whether participation in leisure activities can predict the occurrence of mental ill-health in each lifecycle group. The necessary assumption tests for multiple regression were performed. The Shapiro-Wilk statistic with a Lilliefors significance level was produced for each dependent variable. A normal distribution was not found for any of the variables. Transformation of data was not necessary as the violations of normality were due to skewness of data and not outliers as indicated by Cook's Distance (Hair, et al., 1995; Tabachnick & Fidell, 1996) calculated for each lifecycle cohort. The Levene test of equality of error variances for each of the dependent measures indicates that the perceived participation in time-out leisure has violated this assumption ($p < 0.01$) and therefore any interpretation of significant findings for this variable will be at a more conservative level ($p < 0.01$). For all other variables, Levene's test of equality of error variances has not violated this assumption. Co-efficient output reveals no multicollinearity problem for each of the dependent variables for each lifecycle group as tolerance is > 0.1 and VIF is < 4.0 .

Multiple regression analysis was carried out for each lifecycle group with mental ill-health as the dependent variable and the three leisure variables measuring perceived participation in achievement leisure, social leisure, and time-out leisure (Zuzanek, et al., 1998) as the independent variables for each of the lifecycle groups.

Table 20 shows the results of the multiple regression analyses for each of the four lifecycle groups.

Table 20

Summary of the Three Multiple Regression Analysis for Perceived Participation in Achievement, Social, and Time-Out Leisure Variables Predicting Mental Ill-Health for Each Lifecycle Group

Model	<i>B</i>	<i>SE B</i>	β
Adolescent			
Perceived achievement leisure	-0.576	1.156	-0.061
Perceived social leisure	-0.692	1.322	-0.064
Perceived time-out leisure	-3.795	1.511	-0.321*
Young adult			
Perceived achievement leisure	-0.102	0.664	-0.013
Perceived social leisure	-2.285	0.836	-0.228**
Perceived time-out leisure	-0.718	0.932	-0.063
Middle age			
Perceived achievement leisure	0.048	0.706	0.007
Perceived social leisure	-0.849	0.908	-0.108
Perceived time-out leisure	-2.284	0.847	-0.293**
Older adult			
Perceived achievement leisure	-2.290	1.611	-0.202
Perceived social leisure	1.364	1.818	0.116
Perceived time-out leisure	-2.582	1.812	-0.222

Note. Adolescent: $R^2 = 0.135$ ($p < 0.05$) $\Delta R^2 = 0.094$; Young adult: $R^2 = 0.066$ ($p < 0.05$) $\Delta R^2 = 0.047$; Middle age: $R^2 = 0.126$ ($p < 0.01$) $\Delta R^2 = 0.098$; Older adult: $R^2 = 0.092$ $\Delta R^2 = 0.037$

* $p < 0.05$ ** $p < 0.01$

The multiple regression analysis revealed that perceived participation in time-out leisure made a significant contribution to self-reported mental ill-health for the adolescent ($t = -2.512$, $p < .05$) and middle age ($t = -2.697$, $p < .01$) lifecycle groups. A higher reported level of perceived participation in time-out leisure better predicted lower levels of mental ill-health. Similarly, for the young adult lifecycle group, the reported amount of perceived participation in social leisure made a significant contribution to mental ill-health, with a higher reported level better predicting lower

levels of mental ill-health ($t=-2.285$ $p<.01$). Overall, the three independent variables explained between 7% and 14% of the variance in mental ill-health for each of the lifecycle groups (see Table 20), suggesting that although significant, there are other variables that are affecting the level of mental ill-health in these samples. Despite this, 14% of the variance explained in adolescence and 13% of the variance explained in middle age for mental ill-health is still quite a meaningful result. Other variables such as stress levels (Iwasaki, 2003; Zuzanek, et al., 1998), and individual's dispositions, such as optimism, assertiveness, and perceived control (Cassidy, 2005), have been found to predict levels of mental ill-health. Interpretation of these results, nevertheless, should be made with caution, due to the low reliability of the items measuring the perceived participation in leisure activities (<0.6).

Therefore, the hypothesis that participation in achievement leisure would significantly and negatively predict mental ill-health in all four lifecycle cohorts was not supported. The hypothesis that participation in social leisure would significantly and negatively predict mental ill-health in all four lifecycle cohorts was partially supported, as perceived participation in social leisure negatively and significantly predicted mental ill-health in the young adult lifecycle group. Finally, the hypothesis that participation in time-out leisure would significantly and positively predict mental ill-health in all four lifecycle cohorts was not supported, as perceived participation in time-out leisure, negatively and significantly predicted mental ill-health in the adolescent and middle age lifecycle groups.

CHAPTER 6

Results – Research Question 3

Differences in Leisure Coping and Mental Health between the Lifecycle Groups

The third research question will help to better determine which of the second level subdimensions of leisure coping beliefs (LCB) and leisure coping strategies (LCS) best predict mental ill-health in each of the lifecycle groups. The second level subdimensions of leisure coping beliefs include leisure autonomy (the belief that participation in leisure activities helps to develop individual dispositions that assist in coping with stress) and leisure friendships (belief that friendships derived from leisure activities will provide social support during stressful times). The mean score for the use of the second level LCB subdimensions for each of the lifecycle groups are reported in Table 21. The table shows a decrease in the use of LCB from the young adult to the middle age lifecycle group, supporting the research of Zuzanek and Smale (1997). A decrease in the use of LCB is apparent from the middle age to the older adult lifecycle group.

Table 21

Mean Scores and Standard Deviations for Leisure Coping Beliefs Stratified by Lifecycle Group

				95% Confidence Intervals for Mean	
	Mean	Standard Deviation	Standard Error	Lower Bound	Upper Bound
Leisure Autonomy					
Adolescent	72.02	7.54	0.95	70.12	73.91
Young Adult	73.07	7.39	0.60	71.88	74.25
Middle Age	72.89	8.58	0.86	71.18	74.60
Older Adult	71.74	8.62	1.26	69.21	74.28
Leisure Friendship					
Adolescent	82.02	10.47	1.32	79.38	84.65
Young Adult	82.63	10.11	0.82	81.01	84.24
Middle Age	79.44	11.50	1.16	77.15	81.74
Older Adult	73.02	10.29	1.50	70.00	76.04

The second level subdimensions of leisure coping strategies include leisure companionship (participating in leisure to seek social support from friends derived from leisure activities during stressful times), leisure palliative coping (participating in leisure as means to escape stress), and leisure mood enhancement (participating in leisure to explicitly enhance mood to assist in coping). The mean scores for the use of the second level LCS subdimensions for each of the lifecycle groups are reported in Table 22. The results show a decrease in the use of LCS from the young adult to the middle age lifecycle group, once again supporting the research of Zuzanek and Smale (1997). Similar to LCB, a further decrease in the use of LCS is apparent from the middle age to the older adult lifecycle group.

Table 22

Mean Scores and Standard Deviations for Leisure Coping Strategies Stratified by Lifecycle Group

	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
Leisure Companionship					
Adolescent	30.00	3.93	0.49	29.01	30.99
Young Adult	30.30	3.95	0.32	29.66	30.93
Middle Age	28.86	4.30	0.43	28.00	29.71
Older Adult	26.53	4.93	0.72	25.08	27.98
Leisure Palliative Coping					
Adolescent	28.40	4.18	0.53	27.34	29.45
Young Adult	28.74	4.54	0.37	28.02	29.47
Middle Age	27.61	4.76	0.48	26.66	28.56
Older Adult	25.53	6.97	1.02	23.49	27.58
Leisure Mood Enhancement					
Adolescent	32.49	3.95	0.50	31.50	33.49
Young Adult	32.72	3.96	0.32	32.08	33.35
Middle Age	31.74	3.88	0.39	30.96	32.51
Older Adult	30.09	4.18	0.61	28.86	31.31

A multiple regression analysis was performed to determine which leisure coping techniques best predict mental ill-health for each of the lifecycle groups. The necessary assumption tests for multiple regression were performed and reported below. The Shapiro-Wilk statistic with a Lilliefors significance level was produced for each dependent variable. Normality of distribution was not found for any of the variables. Transformation of data was not necessary as the violations of normality were due to skewness of data and not outliers as indicated by Cook's Distance (Hair, et al., 1995; Tabachnick & Fidell, 1996) calculated for each lifecycle cohort. The Levene test of equality of error variances for each of the dependent measures indicates that none of the variables have violated this assumption at an alpha level of 0.01, therefore homogeneity of variance is assumed. Co-efficient output reveals no

multicollinearity problem for each of the dependent variables for each lifecycle group as tolerance is >0.1 and VIF is <4.0 .

As multiple regression is a robust measure that can withstand some violations of assumptions, a multiple regression analysis was carried out for each lifecycle cohort with mental ill-health as the dependent variable and the five leisure coping variables as measured by the Leisure Coping Belief Scale and the Leisure Coping Strategies Scale (Iwasaki & Mannell, 2000) as the independent variables. Based on previous research (Iwasaki, 2001; Iwasaki, 2003), was hypothesised that the LCB subdimensions will significantly and negatively predict mental ill-health in all four lifecycle cohorts. Table 23 shows the results of the multiple regression analysis for each of the four lifecycle groups.

The results of the multiple regression analysis revealed that the use of leisure as a form of escapism (e.g., leisure palliative coping) positively and significantly contributed to the explanation of mental ill-health ($t=2.291, p<.05$) for the adolescent lifecycle group. Therefore, the greater reported use of leisure for palliative coping, the higher reported level of mental ill-health in this lifecycle group. Similarly, the use of leisure companionships (e.g., actively seeking out leisure companions to help to cope with stress), positively and significantly contributed to higher levels of mental ill-health in the young adult lifecycle group ($t=2.308, p<.05$). For the middle age lifecycle group, leisure autonomy was found to significantly predict lower levels of mental ill-health ($t=-2.659, p<.01$). For the older adult lifecycle group, the multiple regression analysis revealed that the use of leisure mood enhancement (e.g., participating in leisure to make one feel better in times of stress) positively and

significantly contributed to the explanation of mental ill-health in this cohort ($t=-2.424, p<.01$).

The five leisure coping variables explained up to 28% of the variance in mental ill-health for any of the lifecycle groups (see Table 23). Not surprisingly, the percentage of variance explained was larger for the adolescent (21.0%) and the older adult lifecycle groups (27.7%), which is likely due to the higher reported frequency of participation in leisure overall. The amount of variance explained by the leisure coping variables for the young adult and middle age lifecycle groups were approximately 7% and 10% respectively, reflecting a lower frequency of participation in leisure activities overall. The hypothesis that the LCB subdimensions would significantly and negatively predict mental ill-health in all four lifecycle cohorts was not supported. The use of the leisure coping strategies (e.g., leisure palliative coping, leisure companionship, and leisure mood enhancement) seems to be a better predictor of mental ill-health than leisure coping beliefs within this study. Only the leisure coping belief, leisure autonomy, significantly and negatively predicted mental ill-health for the middle age lifecycle group. Leisure coping strategies significantly explained higher levels of mental ill-health in the adolescent and young adult lifecycle group, but accounted for lower levels of mental ill-health in the older adult lifecycle group. The use of LCB and LCS therefore seem to have varying effects on mental ill-health between the lifecycle groups.

Table 23

Summary of Multiple Regression Analysis for Leisure Coping Belief Variables (LCB) and Leisure Coping Strategy Variables (LCS) Predicting Mental Ill-Health for Each Lifecycle Group

Model	<i>B</i>	<i>SE B</i>	β
Adolescent			
Leisure autonomy (LCB)	-0.116	0.150	-0.147
Leisure friendships (LCB)	0.089	0.086	0.156
Leisure companionships (LCS)	-0.042	0.224	-0.028
Leisure palliative coping (LCS)	0.412	0.180	0.289*
Leisure mood enhancement (LCS)	-0.537	0.275	-0.356
Young adult			
Leisure autonomy (LCB)	0.071	0.105	0.090
Leisure friendships (LCB)	-0.101	0.060	-0.175
Leisure companionships (LCS)	0.373	0.162	0.253*
Leisure palliative coping (LCS)	0.058	0.129	0.045
Leisure mood enhancement (LCS)	-0.284	0.191	-0.193
Middle age			
Leisure autonomy (LCB)	-0.273	0.103	-0.448**
Leisure friendships (LCB)	-0.036	0.058	-0.079
Leisure companionships (LCS)	0.192	0.191	0.158
Leisure palliative coping (LCS)	0.057	0.161	0.052
Leisure mood enhancement (LCS)	0.198	0.234	0.147
Older adult			
Leisure autonomy (LCB)	0.082	0.151	0.109
Leisure friendships (LCB)	0.067	0.147	0.108
Leisure companionships (LCS)	-0.248	0.337	-0.191
Leisure palliative coping (LCS)	0.229	0.155	0.249
Leisure mood enhancement (LCS)	-0.875	0.361	-0.570*

Note. Adolescent: $R^2 = 0.210$ ($p < 0.05$) $\Delta R^2 = 0.141$; Young adult: $R^2 = 0.065$ $\Delta R^2 = 0.033$; Middle age: $R^2 = 0.101$ $\Delta R^2 = 0.053$; Older adult: $R^2 = 0.277$ ($p < 0.05$) $\Delta R^2 = 0.186$

* $p < 0.05$ ** $p < 0.01$

CHAPTER 7

Discussion

According to Cassidy (2005), what is missing from the leisure coping field is a lifespan perspective focusing on leisure attitudes and behaviours and the acquisition of these in the developmental process. In this chapter the key findings presented in chapters 4, 5, and 6 will be discussed, specifically in relation to the three research aims established for this project (see chapter 2). The project sought to:

1. provide data on the different activities individuals participate in for achievement, social, and time-out purposes in order to help better understand the acquisition of leisure behaviours in the developmental process;
2. extend understandings of the effects of participation in different leisure activities on mental ill-health, based on reasons for participation (e.g., achievement, social, time-out leisure) for each lifecycle group; and
3. provide new insights into the use of the leisure coping beliefs and leisure coping strategies as described in the HDLSC (Iwasaki & Mannell, 2000), and the influence these have on mental ill-health for four different lifecycle groups representing adolescence to older age adulthood.

The discussion uses each of these aims as foci. It begins by addressing the differences in leisure participation in each lifecycle group, including the change in the frequency of participation in activities for achievement, social, and time-out leisure. Next, the effects of leisure participation on mental ill-health will be discussed, followed by discussion on the use of leisure coping beliefs and leisure coping strategies for each lifecycle group and the effects these have on mental ill-health for each lifecycle

group. Implications for future research and societal applications will be discussed for each of the research aims.

Research Aim 1: Participation and Lifecycle

Results pertaining to the different types of leisure participated in for achievement, social, and time-out purposes were closely related to the results of the original Passmore and French (2001) study. Although results showed some minor differences in the most frequently cited activities for the adolescent lifecycle group (e.g., social leisure), the prominence of physical leisure activities across all three types of leisure (including social and time-out leisure) is an encouraging sign for physical leisure advocates. The results point to a multifaceted reason for participation in leisure across the lifecycle, with the potential for advocates to encourage participation in physical leisure as a source of achievement leisure (e.g., organised sports), social leisure (e.g., gym buddy programs) or even as time-out leisure (e.g., taking walks) for all lifecycle groups. In the light of ongoing campaigns to combat obesity and promote healthy lifestyles in Australia (Roxon, 2008), the high percentage of respondents in all four lifecycle groups reporting participation in physical leisure activities (e.g., sports, outdoor activities, exercising) for all three types of leisure is an encouraging finding.

In addition, the current findings indicate that leisure participation presents individuals with the opportunity to achieve satisfaction in more than one leisure type through participation in a single activity. For example, individuals who like to participate in outdoor activities, such as walking, hiking, or camping, may participate

in these types of activities for both achievement and social reasons. Therefore, participation in a single activity, such as walking, may provide an individual with a sense of accomplishment, and if done with a significant other (i.e., partner/friend), a chance for social interaction also. Despite the potential benefits this may have for certain lifecycle groups (e.g., middle age) where time constraints imposed by work, family, or physical impairment prevent acquiring a larger repertoire of leisure activities, the possible consequence, either positive or negative, of one leisure activity being so dominant in providing reasons for participation requires further investigation.

Despite the prevalence of physical leisure across the lifecycle groups, the frequency of participation in all three types of leisure (achievement, social, and time-out) revealed a decrease in participation for the middle age group comparative to the other lifecycle groups. This finding is crucial to the implications that can be drawn from this research, reaffirming Zuzanek and Smale's (1997) observation of a significant decrease in leisure participation during middle age due to work commitments and familial obligations. The notion of "time famine" (Caldwell, 2005) or being restricted in the amount of time available to pursue leisure activities, seems to be an ongoing issue for the middle age lifecycle group in this type of research. Caldwell refers to time famine as a negative aspect of leisure that affects the therapeutic benefits of participation. This apparent lack of time to pursue leisure activities has the potential to have an adverse effect on health and wellbeing, not only in relation to physical wellbeing through overwork and the lack of physical activity and exercise, but also for mental, social, and emotional wellbeing.

Previous research indicates that leisure participation can buffer stress (Coleman & Iso-Ahola, 1993) and promote positive mental health through the development of individual dispositions such as self-esteem and competency (Passmore & French, 2000). Although this is a finding with important implications, further research is recommended due to the small effect size reported in the results for each of the leisure types. In addition, no differences were found between the lifecycle groups in the enjoyment of leisure activities or the freedom to choose leisure activities for any of the leisure types. This indicates that despite the lower rate of reported frequency in leisure activities for the middle age lifecycle group, there is still a high rate of enjoyment and a perceived freedom to choose leisure activities that remains relatively unchanged between the lifecycle groups.

Non-physical leisure activities were also prominent in the results of the current study. In particular, the older adult lifecycle group generally focused less on physically active leisure pursuits for achievement and social leisure. These individuals reported more cognitively stimulating activities, such as attending courses, reading literary text, studying a new subject of interest, community volunteering, and attending church. The higher prevalence of these activities in the older adult lifecycle group for both achievement and social purposes is an encouraging sign for medical health professionals, as participation has been linked to increased happiness (e.g., reading and writing) (Menec, 2003), increased functionality (e.g., volunteer work) (Menec, 2003), and decreased mortality (e.g., social friendships) (Lennartsson & Silverstein, 2001) in older adults.

As expected, participation in non-physical activities was also prominent for time-out leisure. Supporting the results of Passmore and French (2001), participation in entertainment related activities (e.g., listening to music, watching television, movies) was the highest reported activity for all lifecycle groups. Given the increasing use of technology for teaching within schools, it is not surprising that the adolescent lifecycle group also cited computer-related activities as a source of time-out leisure. In addition, the advent of online chat services (e.g., MSN), and social networking sites (e.g., Facebook, MySpace) has led to an increase in the use of computers, in particular, for leisure purposes. Computer and Internet usage was reported more often in the adolescent and young adult lifecycle groups as a form of time-out leisure, than in the middle age and older adult lifecycle groups. This result is interesting as it suggests that adolescent and young adult respondents are using the Internet as a solitary type activity, possibly as a means of escapism and/or form of relaxation, rather than as a medium for major social networking. Given time-out leisure has been linked to increased mental ill-health in adolescent samples (Passmore & French, 2000), the use of computers and other on-line behaviours for time-out leisure has serious implications for wellbeing. Further research is required to determine how this increasing use of technology affects leisure attitudes and behaviour, and whether these changes impact on the way leisure is used to cope with stress.

Research Aim 2: Participation and Mental Ill-Health

The results of the current study pertaining to the effects of leisure participation on mental ill-health reveal the importance of the *perceived* level of participation for each of the lifecycle groups. The actual frequency of participation in leisure activities (i.e., how many times per week), did not significantly predict mental ill-health in any of the lifecycle groups, whether it was for achievement, social, or time-out purposes. Rather, the *perceived* level of participation, most notably, the perceived level of participation in time-out leisure predicted lower levels of mental ill-health in the adolescent and middle age lifecycle groups, while the perceived level of participation in social leisure predicted lower levels of mental ill-health in the young adult lifecycle group. It therefore appears that how much or how little an individual *feels* he/she is participating in leisure is a better predictor of mental ill-health than actual participation in leisure activities per se. Therefore, a person who believes he or she is participating in a reasonable amount of leisure (differing in effect and type of leisure for each lifecycle group) is more likely to report lower levels of mental ill-health than an individual who perceives a lower frequency of participation. Actual frequency of participation in leisure does not seem to contribute to the prevalence of mental ill-health across the lifecycle groups, albeit the actual rate of participation would undoubtedly precede and be of influence to the perception of participation, thereby indirectly effecting mental ill-health between the lifecycle groups.

The implications of the above finding are two-fold. First, the results indicate that health and wellbeing advocates need to encourage individuals to participate in

leisure at a level at which there is a perception that he or she is being actively involved enough that the individual will perceive it to be of benefit to their personal wellbeing and satisfaction. Second, for each lifecycle group the amount of leisure individuals feel they need to participate in is likely to vary. Further research is needed to determine the desired level of leisure participation in each of the lifecycle groups in order to better understand the amount of leisure needed to help reduce mental ill-health. Therefore, it is the perceived level of participation in leisure activities (e.g., achievement, social, and time-out), which may vary between individuals, that is providing more benefit to mental health and wellbeing than the actual measurement of “how many activities” or “how many times per week”.

Although the results of the current study point mainly to perceived participation in social or time-out leisure as the major contributing factor in lowering levels of mental ill-health in Tasmania, this does not mean that participation in achievement leisure activities, which are predominantly physical in nature, are unimportant to health and wellbeing across the lifecycle groups. Given the high prevalence of physical activities across the three leisure factors (e.g., achievement, social, and time-out) for each lifecycle group, it is more than likely that the sample used in the current study lead relatively active lifestyles. Therefore, it is not surprising that the perceived importance of social and time-out leisure significantly distinguished between individuals who are experiencing higher levels of mental ill-health across the lifespan. Although every effort was made to ensure a wide range of individuals across Tasmania were surveyed, self-report measures contain inherent bias due to motivational issues of individuals willing to participate in such studies.

Findings from the current study, although important, cannot therefore be generalised to the entire population of Tasmania (or more broadly), however, are noteworthy of further research and investigation. Further caution in interpreting the findings of these results is recommended due to the low internal reliability of the questions used for measuring perceived level of leisure participation. Future research should focus on developing a reliable measure of perceived participation in light of the seemingly important relationship this variable has on predicting mental ill-health across the lifecycle.

Research Aim 3: Leisure Coping and Mental Ill-Health

The results of the present study pertaining to the Hierarchical Dimensions of Leisure Stress Coping (HDLSC) provide a clearer picture of how participation is used to help cope with stress, if at all, between the lifecycle groups. For the adolescent lifecycle group, the use of leisure participation for palliative coping (e.g., escapism) was found to significantly predict greater levels of mental ill-health. Therefore, adolescents who reported using leisure participation to escape from stress were more likely to report a greater level of mental ill-health comparative to adolescents who did not report this leisure coping technique. This result is somewhat congruent with Passmore and French's (2000) finding that a higher level of time-out leisure predicted greater levels of mental ill-health. In the current study, however, a higher *perceived* rate of participation in time-out leisure for the adolescent lifecycle group significantly predicted lower levels of mental ill-health. It therefore appears that adolescents who perceive they have a reasonable amount of time-out leisure

report lower rates of mental ill-health, providing that participation is not exclusively a mechanism to escape stress. The direction of cause of the relationship between leisure palliative coping and mental ill-health is unclear. It is possible that adolescents who suffer from mental ill-health are employing leisure palliative coping as a technique, rather than leisure palliative coping causing mental ill-health in this lifecycle group. Further research in this area is needed to help identify the benefits and pitfalls of time-out leisure for adolescents and to determine a causal relationship between the use of leisure palliative coping and mental ill-health.

Interestingly, the results pertaining to the use of the leisure coping beliefs and strategies for the young adult lifecycle group indicate that leisure companionships significantly predict higher levels of mental ill-health. Young adults who specifically participate in leisure activities in order to seek social support from leisure-generated friendships are experiencing higher levels of mental ill-health than those who are not seeking this support. Once again, the direction of this relationship is unclear and it is likely that young adults who are experiencing greater levels of mental ill-health are actively seeking out social support from leisure companions to help cope with stress, rather than this social support network being the cause of mental ill-health in this lifecycle group. Given that a higher perceived rate of participation in social leisure for the young adult lifecycle group was a significant predictor of lower levels of mental ill-health, the belief (rather than an actual strategy) that participation in social leisure results in lower levels of mental ill-health indicates that young adults are seeking out leisure companions to cope with stress. This result reinforces the

importance of social leisure in the young adult lifecycle phase as indicated by Erikson (1959).

Although the middle age lifecycle group identify as the group with the most limited amount of free time available to be allocated to leisure participation (Caldwell, 2005; Zuzanek & Smale, 1997), the results of this study indicate that the use of leisure coping techniques is similar to that of the adolescent and young adult lifecycle groups. This indicates that the middle age lifecycle group maintains a firm belief that leisure participation can help cope with stress, despite the significant difference in the actual rate of participation in achievement, social, and time-out leisure compared to the other lifecycle groups. In particular, the results of this study indicate that for the middle age lifecycle group, it is leisure autonomy or the *belief* that participation in leisure activities can help develop individual dispositions that significantly predicts lower levels of mental ill-health, rather than specific leisure *behaviour* or leisure coping strategies. Given that the perception of participation in time-out leisure significantly contributes to mental ill-health in this lifecycle group, it not surprising that leisure autonomy is the leisure coping technique that contributes most significantly to mental ill-health. It is therefore possible that this perceived participation in time-out activities is providing middle age respondents with the opportunity to rejuvenate and develop positive dispositions that can help them cope with stress and lower levels of mental ill-health. Previous research on adolescents indicates that achievement and social leisure can indirectly affect mental ill-health via individual dispositions such as self efficacy, competence, and self worth (Passmore & French, 2000). Time-out leisure was not linked to these dispositions, however, but

was directly related to the prevalence of mental ill-health. Further research is recommended in order to explore the link between time-out leisure and individual dispositions in lifecycle groups other than adolescents, as the current research points to the benefits of time-out leisure in middle age lifecycle groups on mental health and wellbeing.

It is interesting to note that the older adult lifecycle group employs the use of leisure coping beliefs and leisure coping strategies significantly less frequently than the other lifecycle groups, despite reporting frequent participation (2-3 times per week) in all three types of leisure activities (e.g., achievement, social, and time-out leisure) on the Leisure Questionnaire (Passmore & French, 2001). This result is similar to the findings presented by Zuzanek et al. (1998), who found that the older age lifecycle group perceived experiencing significantly less stress than the other lifecycle groups in their study. Zuzanek et al. (1998) suggest that, due to issues related to retirement and family (e.g., children moving away), older adults are in a life stage with inherently less stress-related factors than younger adults. Regardless, the use of leisure coping strategies, such as leisure mood enhancement (participation in leisure specifically to enhance mood states), was a significant predictor of lower levels of mental ill-health in the older adult lifecycle group. This means that older adults who participate in leisure specifically to enhance mood report lower levels of mental ill-health than those who do not use this leisure coping strategy. This result reinforces the importance of leisure as a coping strategy in the older adult lifecycle phase. Despite older adults having an over abundance of leisure time, and presumably lower stress levels than the other lifecycle groups, this does not discount

the importance of leisure participation as a means of helping to cope with the psychosocial crises of this lifecycle stage, including boredom, worry, and internal despair (Erikson, 1959). Therefore, the use of leisure to specifically enhance mood is applicable to this lifecycle group as a means of coping with internal stress and pressures, rather than external stress and related experiences.

Overall, the use of leisure coping beliefs and leisure coping strategies to promote positive mental health across the lifecycle groups varies. Contrary to other research in the same area (e.g., Iwasaki, 2001), it appears that for this sample of Tasmanian residents, the use of leisure coping strategies, rather than leisure coping beliefs was a better predictor of mental ill-health. The use of leisure as a coping mechanism is an encouraging sign for this sample, due to the relatively high rate of participation in leisure activities reported by the respondents. The results relating to leisure coping beliefs and strategies help to clarify findings within this study relating to the frequency and perceived level of participation in achievement, social, and time-out leisure. Further research investigating the interaction of these factors and their role in helping promote mental health and psychological wellbeing would assist in better understanding the types of leisure most beneficial to enhancing the leisure coping experience.

Conclusion

This research aimed to address three main research questions relating to leisure participation, coping, and lifecycle. Participation in leisure has long been associated with improved physical and psychological wellbeing (Caltabiano, 1995;

Coleman, 1993; Coleman & Iso-Ahola, 1993), and more recently to measures of stress and coping (Iwasaki & Mannell, 2000). With the development of the Hierarchical Dimensions in Leisure Stress Coping, Iwasaki and Mannell (2000) renewed interest in the health benefits of leisure participation. In addition, Cassidy (2005) identified leisure as a life domain, calling for a lifecycle approach in order to provide a thorough understanding of the link between leisure, stress, and coping. Although a lifecycle approach has been conducted previously by Zuzanek et al. (1998), it focused primarily on physical leisure activities, neglecting the role of social or solitary leisure pursuits. Due to more recent research efforts categorising leisure participation based on the reasons for participation, rather than the actual leisure activity per se (Passmore & French, 2001), a lifecycle perspective linking the hierarchical dimensions of leisure coping with the three types of leisure as categorised by Passmore and French seemed warranted. The effect of leisure participation on mental ill-health across the lifecycle therefore became the primary focus of this research.

There are three main themes prominent from the outcomes of this study, and these are summarised below. First, there is a strong focus on physical leisure activities across the lifecycle groups and not only for achievement leisure purposes, but also for social, and time-out purposes. This focus is an encouraging sign in light of current social trends and concerns relating to obesity, heart disease, and other lifestyle issues, relevant for all four lifecycle groups. Second, the *perception* of participation in leisure activities for each lifecycle group contributes significantly to the level of mental ill-health. In particular, participation in time-out leisure

significantly contributes to mental ill-health for the adolescent and middle age lifecycle group while social leisure made a significant contribution to mental ill-health for the young adult lifecycle group. Actual frequency of participation in leisure did not contribute significantly to mental ill-health; however, there is a strong correlation between actual participation and perceived participation. Finally, leisure coping strategies contribute significantly to mental ill-health, more so than leisure coping beliefs. Leisure coping strategies significantly contributed to the presence of mental ill-health in the adolescent, young adult, and older adult lifecycle groups, whereas leisure coping beliefs significantly contributed to mental ill-health in the middle age lifecycle group only. Older adults reported significantly less use of leisure coping than the other lifecycle groups, despite participating in leisure the most frequently.

These three key findings help us to better understand the way in which leisure participation helps to promote positive mental health across the lifecycle. These findings provide useful information to help improve lifestyle through the provision of leisure as a therapeutic concept to either buffer stress or prevent psychological maladaptation. Understanding the types of leisure activities that individuals participate in for each lifecycle group can assist policy makers and health professionals to encourage leisure participation in order to increase community levels of health and wellbeing. In addition, this understanding can assist in identifying areas within the leisure domain that may be the cause of social problems or associated health concerns (e.g., alcohol intake, risky activities).

Furthermore, health promoters should remain conscious of the contribution that the perception of leisure participation has on levels of mental ill-health in each lifecycle group. The results of the current study indicate that the perception of social and time-out leisure contributes significantly to positive mental health, and therefore campaigns should be considered reflecting this finding. Given physical leisure activities were reported in each lifecycle group as a source of both social and time-out leisure, a focus on outdoor activities, rather than organised sports may benefit communities. This does not mean that non-physical activities should be excluded from campaigns promoting mental health, rather physical leisure activities that are being identified as social and time-out in nature will ensure individuals gain both physical and emotional health. In addition, those organisations developing health campaigns should also be conscious that the rate of participation being promoted needs to be achievable by the target group. Results of this study quite clearly show that the perception of participation significantly contributes to lower levels of mental ill-health, not actual participation per se. Therefore, the suggested frequency of participation needs to be achievable yet physically beneficial in order to provide both physical and psychological benefits to the individual and community as a whole. Recent Australian campaigns, such as “*Find Thirty*” (Department of Health, 2008), which promote healthy and active lifestyles for adults (e.g., 30 minutes of exercise per day) and children (e.g., 60 minutes of exercise per day) seem reasonable in promoting health and wellbeing in the community.

Finally, the knowledge of how individuals in each lifecycle group use leisure in order to help cope with stress has important implications for community workers,

counsellors, and therapists promoting positive mental health. Understanding how leisure participation can be used to combat stress effectively and promote wellbeing at different stages of the lifecycle is important in maintaining a healthy body and mind. With knowledge pertaining to the hierarchical dimensions of leisure stress coping, community workers, for example, can encourage adolescents to participate in leisure activities that help to enhance positive mood, rather than encourage activities that provide escape from stressors. Having said this, the results from this study imply that adolescents need to perceive they are participating in an adequate amount of time-out leisure to achieve lower levels of mental ill-health. Therefore, the onus is on the youth worker to provide activities that provide experiences which enhance perception of time-out, whilst also enhancing positive mood, and thus avoiding tendencies of escapism. Understanding which leisure coping technique is more likely to contribute to higher levels of positive mental health across the lifecycle can therefore assist mental health workers to better use leisure participation as a therapeutic technique to maintain health and wellbeing in the community.

This study has significantly contributed to the existing body of research in the leisure coping field by using a lifecycle approach to build on previous research that has focused on the effects of leisure participation on mental ill-health. Despite the inherent limitations in the method (i.e., self-report questionnaires), previous studies in the field have used similar methods to determine the outcomes and effects of leisure on stress and this method was therefore adopted for this research. Nonetheless, the findings from this study are noteworthy and provide a basis for further research in the field of leisure stress coping. In addition, the results have

practical implications in terms of encouraging the use of leisure activities to promote healthy body and mind. Future research in this field should focus on clarifying the effect of *perceived* participation in leisure, above and beyond the effects of actual participation in leisure on health and emotional wellbeing. Although generalisations to the wider Australian community are not recommended due to the sample being Tasmanian-specific, the results pertaining to the differences between lifecycle groups in leisure participation and how this participation in leisure contributes to mental health in Tasmania has important implications for this island community. It is recommended that that future campaigns and government policies to help increase participation in activities and endorse healthy lifestyles should consider the results of this study. Participation in physically active leisure activities for social and time-out purposes seem important in promoting mental health within the community.

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APPENDIX A

Leisure, Stress, & Wellbeing Questionnaire

Purpose of this form

This is a questionnaire about leisure, stress and wellbeing.

The information you provide will be used to understand what leisure experiences are important to you and how these may influence the level of stress you have experienced recently.

Completing this survey is voluntary. Please answer every question, reading the instructions to each part carefully.

Confidentiality

The answers you give will be kept private and only seen by the person who is studying this information. No name or identifying information will be reported.

Attach the label with your unique four-digit Code Number to the space provided below. Please notify the researcher immediately if you have not been given one of these labels.

ATTACH LABEL WITH CODE NUMBER HERE

First of all, we would like you to answer a few questions about yourself

Please mark a cross in the boxes below

1. Are you a male? ☐ or female? ☐
2. What is your age? _____
3. Are you currently at school, TAFE, or university? (please circle) **YES / NO**
4. If yes, what grade or year level are you? _____
5. What is your highest level of education so far?

<input type="checkbox"/> Primary School	<input type="checkbox"/> High School (grades 7-10)
<input type="checkbox"/> Senior Certificate (completed grade 12)	<input type="checkbox"/> Diploma
<input type="checkbox"/> Undergraduate Bachelor Degree	<input type="checkbox"/> Postgraduate Degree
6. Please indicate your level of employment (please tick)

<input type="checkbox"/> Unemployed	<input type="checkbox"/> Full-time Student only
<input type="checkbox"/> Part-time work	<input type="checkbox"/> Casual work
<input type="checkbox"/> Full-time work	<input type="checkbox"/> Full-time with other employment (part-time/casual)
<input type="checkbox"/> Recently retired (1-3 years)	<input type="checkbox"/> Retired (more than 3 years)
7. What is your marital status?

<input type="checkbox"/> Single	<input type="checkbox"/> Partner (boyfriend/girlfriend)
<input type="checkbox"/> Long-term relationship (more than 2 years)	<input type="checkbox"/> Recently Married (1-2 years)
<input type="checkbox"/> Married (3 or more years)	<input type="checkbox"/> Divorced
<input type="checkbox"/> Divorced and in a new relationship	<input type="checkbox"/> Widowed
<input type="checkbox"/> Widowed and in a new relationship	
8. Do you have any children? (please circle) **YES / NO**
9. If yes, do any of your children live with you? (please circle) **YES / NO**

Part 1: Leisure Activities

There are three main types of leisure activities people are involved in (1) Achievement-type activities, (2) Social activities, and (3) Time-out leisure activities. The following questions ask about your leisure activities. Answer based on what you really do.

Achievement Activities

The first group is leisure activities, which gives you a sense of *achievement*, often through competition or a personal challenge.

1. Make a list of ALL the **leisure activities** that you find give you **a sense of achievement**, not only sporting activities.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

2. Select up to three of the above **activities that give you a sense of achievement** that you do most often. Write them down here.

- a) _____
- b) _____
- c) _____

3. How often do you do each of these **achievement type activities**? Please place a cross in the box, which most closely describes how often you do the activity?

	<i>Daily</i>	<i>2-3 times a week</i>	<i>Every week</i>	<i>Every month</i>	<i>Once every few months</i>
Activity a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Activity b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Activity c)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. How enjoyable do you find each of these **achievement type activities**?

	<i>Not Enjoyable</i>	<i>Somewhat Enjoyable</i>	<i>Enjoyable</i>	<i>Very Enjoyable</i>
Activity a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Activity b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Activity c)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Do you do each of these **achievement type activities** because you chose them?

	<i>Yes</i>	<i>No</i>
Activity a)	<input type="checkbox"/>	<input type="checkbox"/>
Activity b)	<input type="checkbox"/>	<input type="checkbox"/>
Activity c)	<input type="checkbox"/>	<input type="checkbox"/>

6. Compared to people your own age, how active do you **FEEL** in relation to Achievement-type Leisure?

<i>I feel less active than others</i>	<i>I feel about the same as others</i>	<i>I feel more active than others</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Social Activities

The second group of activities describes activities you enjoy doing in the company of other people that are more *social* activities.

7. Make a list of the **social leisure activities that you do in the company of other people.**

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

8. Select up to three of the above **social** activities that you do most often. Write them down here.

a) _____

b) _____

c) _____

9. How often do you do each of these **social activities**? Please place a cross in the box that best describes how often you do a particular activity.

	<i>Daily</i>	<i>2-3 times a week</i>	<i>Every week</i>	<i>Every month</i>	<i>Once every few months</i>
Activity a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Activity b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Activity c)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. How enjoyable do you find each of these **social activities**?

	<i>Not Enjoyable</i>	<i>Somewhat Enjoyable</i>	<i>Enjoyable</i>	<i>Very Enjoyable</i>
Activity a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Activity b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Activity c)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. Do you do each of these **social activities** because you chose them?

	<i>Yes</i>	<i>No</i>
Activity a)	<input type="checkbox"/>	<input type="checkbox"/>
Activity b)	<input type="checkbox"/>	<input type="checkbox"/>
Activity c)	<input type="checkbox"/>	<input type="checkbox"/>

12. Compared to people your own age, how active do you **FEEL** in relation to Social Leisure?

<i>I feel less active than others</i>	<i>I feel about the same as others</i>	<i>I feel more active than others</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Time-Out Activities

The third group of leisure activities were for relaxation, refreshment or *time-out*. Often these are activities you can also do on your own.

13. Make a list of the **time-out activities that you do** but do not include sleeping.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

14. Select up to three of the above **time-out** activities that you do most often. Write them down here.

a) _____

b) _____

c) _____

15. How often do you do each of these **time-out activities**? Please place a cross in the box that best describes how often you do a particular activity.

	<i>Daily</i>	<i>2-3 times a week</i>	<i>Every week</i>	<i>Every month</i>	<i>Once every few months</i>
Activity a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Activity b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Activity c)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. How enjoyable do you find each of these **time-out activities**?

	<i>Not Enjoyable</i>	<i>Somewhat Enjoyable</i>	<i>Enjoyable</i>	<i>Very Enjoyable</i>
Activity a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Activity b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Activity c)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. Do you do each of these **time-out activities** because you chose them?

	<i>Yes</i>	<i>No</i>
Activity a)	<input type="checkbox"/>	<input type="checkbox"/>
Activity b)	<input type="checkbox"/>	<input type="checkbox"/>
Activity c)	<input type="checkbox"/>	<input type="checkbox"/>

18. Compared to people your own age, how active do you **FEEL** in relation to Time-out Leisure?

<i>I feel less active than others</i>	<i>I feel about the same as others</i>	<i>I feel more active than others</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part 2: Leisure Coping

Some people use leisure activities to help them cope with stress. To answer these questions, **think back to the most stressful event that you experienced in the past year** and recall how you coped with this event.

Think back to the most stressful event that you experienced in the past year and recall how you coped with this event. Please place a cross over the answer that best describes your present agreement or disagreement with each statement.							
Question	1	2	3	4	5	6	7
1. Leisure provides opportunities to regain a sense of freedom.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
2. My leisure involvements strengthen my ability to manage problems in life.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
3. My leisure companions listen to my private feelings.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
4. My leisure companions help me to feel good about myself.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
5. When I need to borrow something, my leisure companions will lend it to me.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
6. My leisure companions assist me in deciding what to do.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
7. My leisure allowed me to be in the company of supportive friends.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
8. I engaged in a leisure activity to temporarily get away from the problem.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
9. My leisure helped me feel better.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
10. I gain feelings of personal control in leisure.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
11. What I do in leisure allows me to feel good about myself.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
12. For me, leisure is a means of developing friendship.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree

Question	1	2	3	4	5	6	7
13. My leisure companions hold me in high esteem.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
14. If I need extra hands for doing tasks, I can turn to my leisure companions.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
15. My leisure companions give me advice when I am in trouble.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
16. Socialising in leisure was a means for managing stress.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
17. Escape through leisure was a way of coping with stress.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
18. I gained a positive feeling from leisure.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
19. Leisure is a self-determined activity for me.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
20. Leisure contributes little to giving me energy to handle problems.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
21. I feel emotionally supported by my leisure companions.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
22. I'm respected by my leisure companions.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
23. My leisure companions would lend me money if necessary.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
24. My leisure companions often provide me with useful information.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
25. I dealt with stress through spending leisure time with my friends.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
26. Leisure was an important means of keeping myself busy.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
27. I maintained a good mood in leisure.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree

Question	1	2	3	4	5	6	7
28. My leisure pursuits are freely chosen.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
29. I am able to openly express who I am in my leisure time.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
30. I lack emotional support from my leisure companions.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
31. I feel that I am valued by my leisure companions.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
32. Most of my leisure companions are happy to take care of my house, children, or pets when I am away.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
33. I can talk to my leisure companions when I am not sure what to do.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
34. Engaging in social leisure was a stress-coping strategy for me.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
35. Engagement in leisure allowed me to gain a fresh perspective on my problem(s) with renewed energy.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
36. My leisure involvements failed to improve my mood.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
37. I have difficulty in deciding what to do in leisure.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
38. The things I do in my leisure help me gain confidence.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
39. Lack of companionship in leisure prevented me from coping with stress.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
40. By escaping from the problem through leisure, I was able to tackle my problem(s) with renewed energy.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
41. Leisure made me feel miserable.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
42. I feel constrained in leisure.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree

Question	1	2	3	4	5	6	7
43. My leisure participation enhances my self-concept.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
44. One of my stress-coping strategies was participation in social leisure.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
45. I took a brief break through leisure to deal with stress.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
46. Leisure helped me manage my negative feelings.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
47. I decide what to do in my leisure time by myself.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree
48. Opportunities to express myself in leisure enhance my self-concept.	Very Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Very Strongly Agree

Part 3: Wellbeing

The following set of questions deals with your health and wellbeing over the past few weeks.

Please consider the last four weeks and answer the following questions by placing a cross over one of the four answer options.				
Question	1	2	3	4
1. Been able to concentrate on what you're doing	Better than usual	Same as usual	Less than usual	Much less than usual
2. Lost much sleep over worry	Not at all	No more than usual	Rather more than usual	Much more than usual
3. Felt you were playing a useful part in things	More so than usual	Same as usual	Less useful than usual	Much less useful
4. Felt capable of making decisions about things	More so than usual	Same as usual	Less useful than usual	Much less useful
5. Felt constantly under strain	Not at all	No more than usual	Rather more than usual	Much more than usual
6. Felt you couldn't overcome your difficulties	Not at all	No more than usual	Rather more than usual	Much more than usual
7. Been able to enjoy your normal day-to-day activities	More so than usual	Same as usual	Less useful than usual	Much less useful
8. Been able to face up to your problems	More so than usual	Same as usual	Less useful than usual	Much less useful
9. Been feeling unhappy and depressed	Not at all	No more than usual	Rather more than usual	Much more than usual
10. Been losing confidence in yourself	Not at all	No more than usual	Rather more than usual	Much more than usual
11. Been thinking of yourself as a worthless person.	Not at all	No more than usual	Rather more than usual	Much more than usual
12. Been feeling reasonably happy, all things considered	More so than usual	About the same as usual	Less so than usual	Much less than usual

APPENDIX B

Centre for Human Movement
Faculty of Education

[Insert date]

Dear [insert name of manager]

Leisure participation and coping with stress:

A lifespan approach

We would like to invite members of your organisation to participate in research on leisure participation, stress and wellbeing. We are approaching organisations, clubs and workplaces around Tasmania to ensure an adequate representation of individuals across the lifespan. We would like for you to consider your organisation's participation in this project, and seek permission to access your members for the purposes of the study.

Leisure has been identified by researchers as having the potential to buffer the effects of stress and enhance coping within individuals. The majority of research so far has dealt with select social groups; therefore the aim of this study is to investigate the role of leisure and its effects on stress to enhance coping and wellbeing across the lifespan.

The two main objectives of this study are:

- To determine what differences exist in leisure participation for individuals across the lifespan, and
- To investigate any links and interactions between leisure participation (type of activity and frequency of participation) and stress levels, psychological wellbeing and coping skills.

Given that stress and leisure are experiences common to all individuals, their interaction to promote wellbeing is an important area for research. The outcomes of the study will provide practical recommendations for individuals at different stages of life in how to best use their leisure time and/or activities to promote psychological wellbeing.

An information sheet, which outlines the project, is attached. The design of the project involves participants completing an anonymous questionnaire of approximately 30 minutes duration. It is hoped that as many members as possible will participate in filling out this questionnaire.

We hope that this project will be of interest to your organisation and look forward to working with you in the future. A member of the research team will be in contact shortly and we would welcome the opportunity to discuss this project further.

Yours sincerely,

Ben Kelly
Ph: 62262574

Leisure participation and coping with stress: A lifespan approach

Information Sheet

RESEARCHERS:

Mr. Ben Kelly (Investigator)

Dr. Dean Cooley (Chief Investigator)

PURPOSE OF THE STUDY

The aim of the project is to investigate the association between participation in different types of leisure activities and psychological wellbeing. We will examine this association using a lifespan approach. This project is being undertaken to fulfil the requirements of a PhD degree by Mr. Ben Kelly within the Centre for Human Movement (Faculty of Education) at the University of Tasmania.

PARTICIPANT BENEFIT

The outcome of the research will detail the types of leisure activities that best help individuals deal with stress and enhance psychological wellbeing. By participating in this study, your organisation will be provided with a report detailing the findings of the study. This report will include recommendations of how individuals at different ages, more specifically the age of your members, can use different types of leisure to reduce the effects of stress, enhance psychological wellbeing, and improve their quality of life.

WHO WILL BE INVOLVED?

Due to the nature of the project (i.e., lifespan research), all members of your organisation have the potential to participate.

WHAT DO I NEED TO DO?

Members of your organisation who participate in this study will be asked to fill in a self-report questionnaire. The questionnaire will take approximately 30 minutes to complete and will contain items relating to leisure participation, stress, coping, and psychological wellbeing. If you choose to participate, a member of the research team will need to visit your organisation on three occasions.

1. First, to meet with you to discuss and organise times suitable for your members to attend an Information Session on the project and to arrange a date for the administration of the questionnaire.
2. The second visit will be to conduct the Information Session. During this session the researcher will introduce the project and distribute an Information Sheet and Consent Form for participation. The researcher will go through the details on the Information Sheet, answer any questions relating to the study, and ask for any members who would like to participate in the study to sign the Consent Form.
3. On the third visit, the same researcher who ran the Information Session administers the questionnaire to the participants who have returned their signed Consent Form. The researcher will remain onsite during the completion of the questionnaire to answer any questions or concerns that may arise during the administration. In respect to members of your organisation who are under the age of 18 years, both a parental consent form and participant consent form need to be signed and obtained from each participant before they complete the questionnaire.

ARE THERE ANY RISKS IN PARTICIPATING?

Participating in this project will not create any significant stress or emotional discomfort. This project and questionnaire has received ethical approval (HREC approval number: H8966) from the Human Research Ethics Committee (Tasmania) Network, which is constituted under the National Health and Medical Research Council.

CONFIDENTIALITY

Participation will be anonymous. Participants will not be asked to record their name for the purpose of the study, nor will any other identifying piece of information be asked on the questionnaire. Along with the questionnaire, the participants will be distributed with a label printed with a random 4-digit Code Number. Participants will be asked to record their Code Number and keep it with them somewhere secure, then peel off the label and stick it on the front of their Questionnaire. This Code Number will be their anonymous identification.

FREEDOM TO REFUSE OR WITHDRAW

Participation in all aspects of this project is entirely voluntary. Your organisation can choose not to participate or at anytime withdraw from participating without any ill-effects. Likewise, participants or parents/guardians of participants are free to choose not to participate or can withdraw from the study at any time by calling one of the researchers at the University of Tasmania and quoting their unique 4-digit random Code Number. The participant's data will then be withdrawn from the study and the original questionnaire destroyed by shredding.

WHO DO I CONTACT IF I HAVE ANY QUESTIONS?

If you have any questions relating to the project, please contact one of the researchers listed below and they will be happy to answer any questions or concerns.

Mr. Ben Kelly (Investigator) – phone: 03 62262574 (Hobart); 03 63243704 (Launceston)
E-mail: Ben.Kelly@utas.edu.au

Dr. Dean Cooley (Chief Investigator) – phone: 03 63243096
Email: Dean.Cooley@utas.edu.au

Leisure participation and coping with stress: A lifespan approach

Information Sheet

Dear Participant,

We would like to invite you to participate in research on leisure participation, stress and wellbeing. Your organisation [club/workplace] was one of many around Tasmania who have agreed to participate in this important study.

Given that stress and leisure are experiences common to all individuals, their interaction to promote wellbeing is an important area for research. The outcomes of the study will provide practical recommendations for individuals at different stages of life in how to best use their leisure time and/or activities to promote psychological wellbeing.

Below you will find some important information about how to participate in this study.

Purpose & benefits of the study:

The aim of the project is to investigate differences in the type of leisure activities and the frequency of leisure participation for individuals across the lifespan. This project will also investigate individual differences in stress levels and psychological wellbeing and how participation in different types of leisure might affect these. Results of this study will include recommendations of how people your own age can use leisure to reduce the effects of stress, enhance psychological wellbeing, and improve their quality of life.

What will I have to do?

If you choose to participate in the study you will be asked to fill in a questionnaire that will take approximately 30 minutes of your time to complete. The questionnaire will contain items relating to leisure participation, stress, coping, and psychological wellbeing. All participants will be asked to sign a consent form before completing the questionnaire and if you are under the age of 18 years, then you will need a parent or guardian to sign a consent form before you can participate. Your participation in this study is entirely voluntary, and if you choose to participate, but then change your mind, you can withdraw at any time, even after you have completed the questionnaire.

Will my information be confidential and anonymous?

Every attempt will be made to ensure confidentiality. For example, all participants are given a randomly assigned 4-digit code number to place on their questionnaire. This number is only known to you. There are no master lists. If you decide to withdraw from the project after you have completed the questionnaire, then you simply need to call one of the researchers and quote your code number and your data will be removed from the project and your questionnaire will be shredded. All data will be kept in a locked filing cabinet at the University of Tasmania, and after 5 years will be destroyed by shredding and disposed of by security disposal.

This project is being undertaken to fulfil the requirements of a PhD degree by Mr. Ben Kelly within the Centre for Human Movement (Faculty of Education) at the University of Tasmania.

Results from the study will be reported in his doctoral thesis and in journals and conferences. Your organisation [club/workplace] will receive a summary of the results from the study. Advertisements of when the results are available will be posted at your organisation [club/workplace], or you can email the researchers for a copy. If you want your own personal results, then you can obtain these by contacting one of the researchers and quoting your code number. You will be sent your results.

Concerns or complaints:

If you have any questions about the project, please do not hesitate to contact one of us. For information on your rights as a research participant, any concerns of an ethical nature or complaints about the manner in which the project is conducted, please contact the Executive Officer at the Human Research Ethics Committee (Tasmania) Network and quote the HREC approval number: H8966. The Executive Officer will direct participants to the relevant Chair that reviewed the research.

Executive Officer: Amanda McAully, phone: 62262763

Many thanks for your help and your participation is greatly appreciated.

Yours sincerely,

Mr. Ben Kelly (Investigator) – phone: 03 62262574 (Hobart); 03 63243704 (Launceston)
E-mail: Ben.Kelly@utas.edu.au

Dr. Dean Cooley (Chief Investigator) – phone: 03 63243096
Email: Dean.Cooley@utas.edu.au

CONSENT FORM

Title of Project: **Leisure participation and coping with stress: A lifespan approach**

1. I have read and understood the 'Information Sheet' for this study.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study involves the following procedures:
 - Complete the questionnaire relating to leisure participation, stress, coping and psychological wellbeing.
4. I understand that there may be discomfort experienced by participating in a study that asks about my quality of life, but that any risk attached to this is mitigated by the researcher treating data pertaining to me confidentially. In any event, I understand that my participation is entirely voluntary and that I can withdraw from the study at any time, without prejudice.
5. I understand that all research data will be securely stored on the University of Tasmania premises for a period of 5 years and then destroyed.
6. Any questions that I have asked have been answered to my satisfaction.
7. I agree that research data gathered for the study may be published provided that I cannot be identified as a participant. I understand, however, that there is a slight risk that my workplace could be identified, and if so, participants identified, albeit not as individuals.
8. I understand that my identity will be kept confidential and that any information I supply to the researcher(s) will be used only for the purposes of the research.
9. I agree to participate in this investigation and understand that I may withdraw at any time without any effect, and if I so wish, may request that data that I have supplied to date be withdrawn from the research.

Name of participant _____

Signature of participant _____ Date _____

Statement by the investigator:

10. I have explained this project and the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation.

Name of investigator _____

Signature of investigator _____ Date _____